DPRG
DALLAS PERSONAL ROBOTICS GROUP

Summer (May/June) 1994 | A Newsletter for Personable Robot Enthusiasts | Vol. 2 No. 56

That Was Then...

At the April DPRG Meeting, we all got the low down on the Austin Group's Robofest, complete with color photos and glowing reviews from those of us who braved the wee hours on the road only to arrive four hours early! Consensus? FANTASTIC!!!

Vincent Gaines, one of our new members, became the Visionary Extraordinaire in charge of construction for the "Group Bot" (we've got to name this thing!) The "GB" Building Committee is forming quickly. If you want to be in on the ground floor of a new creation, sign up now. We still have room for both novice 'Botmen and Gurus, plus everyone in between. Contact Vincent at the next meeting, or you can reach me via Internet at: eric@sssi.com

We discussed a new membership dues structure, newsletter subscription rates for non-members, looking for corporate sponsors, and just about any other idea for keeping the coffers full enough to keep mailing out our dear newsletter. In some cases our records aren't complete enough to know whose dues are due when, so if you think that it's been awhile since you've helped out with postage and all, please send in your annual membership dues of $20. I promise you I won't be grabbin' the cash and headin' for Mexico. Heck, I might not even get as far as South Dallas!!!

Interocitor BBS (214-258-1832)

The New and Improved BBS seems to be doing great running on OS/2. Steve Rainwater (the sysop) has added new areas for AI and Robotics, and has many new neat-o files. Call and check it out. Steve also mentioned trying to rig some "special access" for DPRG members. Put that in your pipe and smoke it!

...And This Is Now

At the May DPRG Meeting, we heard from the members who made it to the NTAAI Artificial Intelligence Extravaganza down at the University of Texas at Arlington. The DPRG had a booth down there where we had several Robots on display. There was quite a bit of interest in how we were actually putting some of their high-falutin' AI theories to real-world practical use. Steve Rainwater, yes, the creator of the magnificent NCC AI-CDROM, and the 'Botman with that weird looking white plastic shell thing on his monster wheeled Robot creation, is our liason with the NTAAI and has info on their organization for the interested. You can contact Steve, either about the AI-CDROM or the NTAAI on the Interocitor BBS or via Internet at srainwater@ncc.com.

We also just received the Media Information Package on ACLYPSE Corporation's latest offering, the ACLYPSE ADR-1 ROBOT Kit. Looks like one of the best kits out lately, and it's less than $300! See some of the details inside. Bob, if you're listening, how about sending a demo our way? <drool... drool...>

Inside, you should find some of the shocking preliminary results from our "Annual Spring Survey". You got to see 'em to believe 'em so read on.

> **NOTE:** If you haven't sent your survey in yet, fill it out and get it in the mail, we'll be compiling the stats as long as they continue to roll in.

We've also got a new regular column starting this month, featuring articles from the DPRG archives. The DPRG has been around a lot longer than most of you might suspect, pretty soon we'll be going into our 11th year! Over the many years our various newsletters have all been chock full of great ideas, and wonderful Robot stories. Don't miss reading about them, in the column, **"memcpy(now, then, x);"**.

87C750 Destroys PIC

By Roger Arrick

Surely you've heard of the PIC microcontroller from Microchip. Practically every electronics magazine I pick up has one or more articles featuring this little guy. The latest issue of Circuit Cellar INK has an article describing how to build a programmer for the PIC, an article about how to build an aerial photography system using one, along with about a half-dozen ads offering everything from C compilers to emulators. The latest issue of MicroComputer Journal has an article and a half-dozen ads also. And on, and on, and, well you get the picture.

I know, your first impression is that I hate PIC's, or maybe microcontrollers in general. Nothing could be further from the truth. In fact, I use them all the time. Maybe I just can't find anything else to write about. Nope, wrong again. I wasn't even amazed at the PIC's initial success when it was announced a few years back. What I am amazed at is it's continued success and popularity in spite of the current competition which, quite frankly, exceeds in almost every area, even price. Maybe it's a new law of physics known as chip inertia, controller momentum, or maybe PIC adhesion.

The reason the PIC was so popular at first was the feature list which included, speed, simplicity, low power consumption, and low cost - very low! Your not going to be able to port DOS to the PIC, but it wasn't intended for that. It was meant to be a control processor and is often used to reduce glue logic in slow speed circuits. You probably use a PIC almost every day without even knowing about it. Get a screwdriver and open up the mouse next to your computer. You just may find a PIC inside! The PIC was and is one fancy machine. In fact, I would say the PIC is awesome.

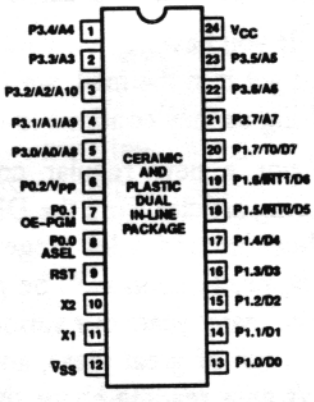
The PIC was so great that many engineers could finally implement ideas that had be waiting in their notebooks for the right chip to come along, others switched their 8051-based designs over to the PIC.

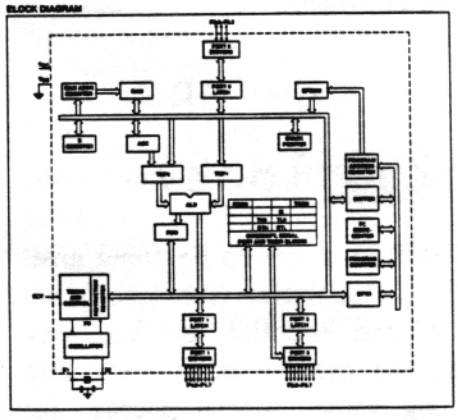
Well, that was then and this is now! (this is now isn't it?) When I needed a small, cheap, microcontroller for a recent project, I looked at the PIC and said wow. I then looked at some of the new 8051 derivatives and said WOW! These new 8051's are like PIC's only different! They actually have the 8051 instruction set I've been using for eons and best of all they're cheap, cheap, cheap. Yes, I needed a new programming module (about $50), but other than that, my investment was the null set! I'm speaking specifically of the S87C750, 751 and 752 chips from Philips.

You can get these guys from Allied Electronics (xxx) xxx-xxxx. If you decide to act soon, Philips is having a contest to promote the use of the 87C750 and is offering a development board for only 47.50! (800) 447-1500. It includes all the hardware, software and documentation needed to quickly build, emulate and debug your designs. Who knows, your design may even win you the grand prize of a new Camaro!

I challenge you to investigate these new 8051's for your next project. You'll be glad you did!

87C750	1K EPROM, 64 RAM, 19 I/O, 1 timer, skinny dip
87C751	2K EPROM, 64 RAM, 19 I/O, 1 timer, I2C bus, skinny dip
87C752	2K EPROM, 64 RAM, 21 I/O, 1 timer, I2C, PWM, 8-Bit ADC





Roger Arrick is past-president and an active member of the Dallas Personal Robotics Group. He can be reached on the BBS at (214) 258-1832 or at P.O. Box 1626 Hurst, TX 76053.

"memcpy(now,then,x);"

This new column features reprints of articles, letters, ideas, and dreams from the DPRG archives, old newsletters and napkins. I'll try to introduce each piece with a brief bit of history (if known) and then the piece stands as it was. Enjoy! -- *Eric*.

From DPRG's 1st year -- the Proposed Goals:

DALLAS PERSONAL ROBOTICS GROUP
PROPOSED GOALS
August 18, 1984

The purpose of the Dallas Personal Robotics Group is to encourage and promote the development of personal robotics. In accordance with this purpose, the following have been proposed as suitable goals for the organization. We solicit the input of the members for revising or adding to these goals.

- Encourage participation by all those interested in personal robotics regardless of their level of technical knowledge.
- Facilitate the exchange of information among those with varying abilities, equipment, and interests.
- Educate the general public concerning the present and future capabilities of personal robots.
- Facilitate joint projects requiring the resources and abilities of more than one member.
- Provide continuing technical education for members with varying levels of expertise.

Excerpt from Nov-Dec 1985 DPRG newsletter, then named, "The Robot Companion":

A Little Semantic Music, Professor

By Paul Swan

A robot by any other name (would still fail to work properly about 32% of the time.) The word "robot", as all aficionados know, was introduced by the Czech writer, Karel Capek, in this 1921 play "R.U.R." (which stood for "Rossum's Universal Robots". The name comes from the Czech word "Robata" which means work, and referred to the "mechanical workers" who were produced, and then turned upon their human makers.

SHOCKING SPRING SURVEY!

Sorry Folks! I ran out of space and time on the survey results... But on the bright side, that means if you still haven't mailed in your survey, you still have time to do it! So let your conscience gnaw on you a bit and cough up a stamp.

Places to check out:

- **1st Saturday Sale, a.k.a. Super Saturday Sale, a.k.a. Sidewalk Sale**. This is a flea market style get together on the 1st Saturday of each month in downtown Dallas. It used to be mainly a HAM radio swap meet, but now is mostly computer/tech stuff oriented. There's usually several hundred booths setup spanning several of the downtown parking lots just full of mostly used computer equipment, but lately there's been quite a few vendors with good prices on new stuff also. I usually try to not spend more than $10 bucks a computer and not more than $30/MB for RAM. You can't miss it if you go to the corner of Central Expressway and Ross Ave. It'll look like a scene from the LA riots with all the people carrying junk up and down the streets!

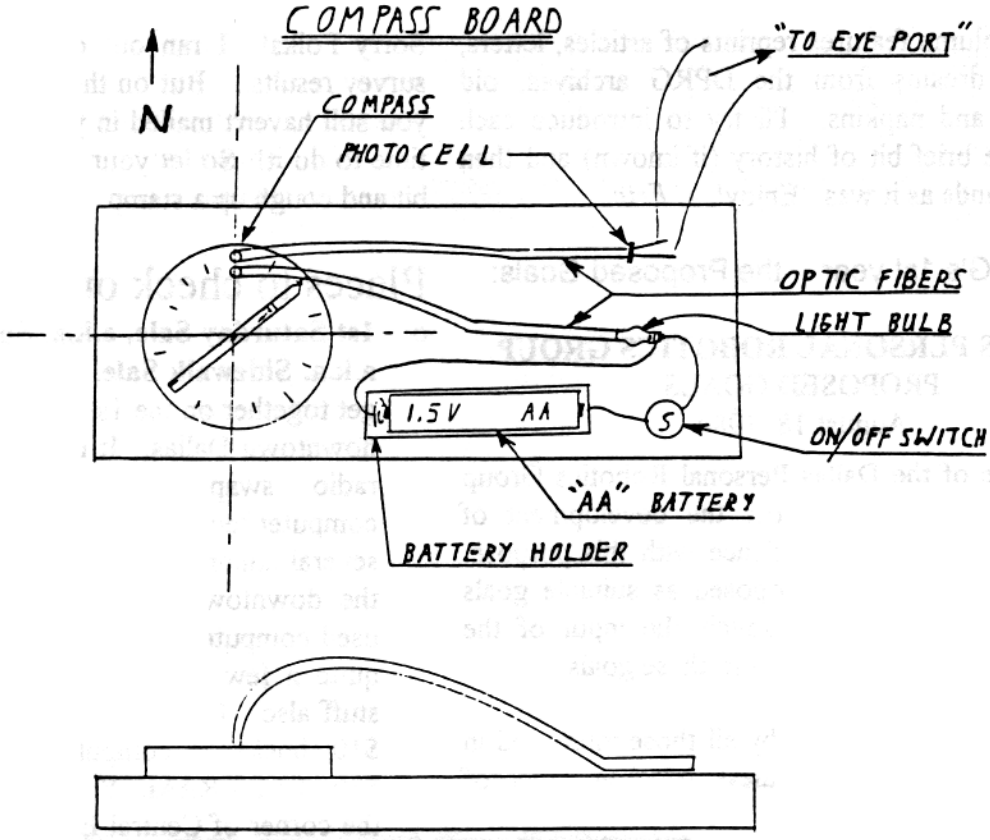
The DPRG Newsletter is published monthly by the Dallas Personal Robotics Group. Membership in the DPRG costs $20 per year and includes a free subscription to this newsletter. The subscription rate for non-members is $20 per year and includes a free 1 year membership in the DPRG. For more info, or especially to submit newsletter articles, contact:

Dallas Personal Robotics Group
Attn: Eric Yundt - President
5112 Hardaway Circle
The Colony, Texas 75056

Internet: eric@sssi.com
Fidonet: Eric Yundt@1:124/2206

or on:

The Interocitor BBS
(home of the AI CD-ROM)
(214) 258-1832



NOTES:

1. THE COMPASS IS AN "OIL FILLED" COMPASS AND IS FLAT BLACK ON THE INSIDE DISK.
2. THE OPTIC FIBERS ARE 1/8" DIA. AND ARE PLASTIC.
3. THE FACE OF THE PHOTO CELL IS ABOUT 1/8" IN DIA.
4. BOTH OPTIC FIBERS, THE PHOTO CELL, AND THE LIGHT BULB, ARE SHIELDED FROM LIGHT TO PREVENT BLEED OVER.
5. THE ENTIRE UNIT MUST BE PLACED IN A NON-METALIC "BLACK BOX" (NOT SHOWN).
6. THE COMPASS SHOULD BE MOUNTED A MINIMUM OF 8 OR 10 INCHES ABOVE THE ROBOT'S HEAD TO REDUCE MAGNETIC INTERFERENCE WITH THE METAL CHASSIS.
7. THE EXISTING PHOTO CELL IN THE ROBOT MAY BE TEMPORARILY DISCONNECTED, (AND LEFT IN PLACE), TO HOOK UP THE COMPASS PHOTO CELL.

WALTER BRYANT 6-14-85

The Interocitor Report

In the days to come this column will try to cover topics of interest that are related to the Interocitor BBS, Fidonet, and the Internet -- Steve Rainwater.

At the last DPRG meeting (May 18), it was decided to seek increased funding and set some more aggressive goals for future group activities. One of the possibilities discussed was seeking corporate funding for a group robot to be entered in a national competition. What follows is a sampling of the information on competitions which is available from our BBS. Since I cannot include the entire content of the files in this column, I would highly recommend that anyone who is interested download and read the original files.

The BEAM Robot Olympics is a very high profile, international competition held in a different country each year. It was in Canada in 1992 and Scotland in 1993. The Robot Olympics are much like the human Olympics in that there are many different events such as rolling, walking, rope climbing, flying, and jumping. There are also events for specialized robots that are solar powered, very small, etc. Contestants come from many different Universities and organizations (commercial or industrial robots are prohibited.) All events are nondestructive to the robots.

The AAAI holds a robot competition in conjunction with their annual meeting each year. The AAAI has made numerous changes to the competition but always with the same goal in mind. Unlike most other competitions, this one is looking for the most capable general purpose robot. Past contests have involved fairly complex navigation, recognition, and manipulation skills. As an example, the 1993 contest required each robot to explore and map all objects in a series of rooms after which it would be instructed to navigate to a series of locations and retrieve specific objects. An entry in the AAAI contest would have to be small enough to navigate within a typical room, would need fairly extensive sensory and perceptual capabilities, and the ability to accept commands from an operator.

An example of a third type of contest is the Critter Crunch, head annually by The Denver Mad Scientists Club. The Critter Crunch is essentially armed robot combat. Robots meet within a combat area and the winner is the one which remains functional and within the combat area for the longest amount of time. The competition can be destructive to the robots themselves and weapons are limited only by OSHA restrictions and rules designed to prevent harm to humans or the building in which the competition is held. Past Critter Crunch competitions have seen the use of tethered projectiles, flame throwers, and robots with propane powered internal combustion engines.

While there are many other robot competitions, these three represent a cross section of the type of events being held. Virtually none of the competitions offer prizes valuable enough to fully compensate a winning organization for the cost of an entry. Most of these events do get fairly good media coverage and should provide some incentive to a potential corporate sponsor. Nearly all of them will require travel expenses for one or more DPRG members in addition to the cost of building the robot itself.

My own opinion is that, while the Critter Crunch might well prove to be the most fun, the BEAM Robot Olympics would be the best target for the DPRG to aim for. We have a much better shot at getting a robot ready within a year that could be entered in some of the basic BEAM events than we do of building something of the complexity required for the AAAI contest. Once we've been to the Olympics and returned with a few gold medals, we can move up to the AAAI competition or perhaps even an aerial vehicle. In any event, we need to start the planning (and some fund raising) now if we hope to get an entry in the '94 or '95 Olympics.

Files related to this column that may be obtained from the Interocitor BBS:

AAAIRC92.ZIP	Rules for the 1992 Robot Circus & Competition
AAAI93.ZIP	Report from a contestant in the 1993 AAAI Competition
BEAM93.ZIP	Rules for the 1993 BEAM Robot Olympics
CC1993.ZIP	Rules for the 1993 Critter Crunch Robot Competition
IAV95.ZIP	Rules for the 1995 Autonomous Intelligent Vehicle Competition
RF5_SUMO.ZIP	Rules for the 1994 Robofest Sumo Competition
ROBOCOMP.ZIP	FAQ on robot competitions with contacts for more information
SFRSSUMO.ZIP	1994 San Francisco Robotics Society Sumo competition rules

Internet	**srainwater@ncc.com**
Fidonet	**Steve Rainwater@1:124/2206**
CompuServe	**72066,3606**

DPRG

DALLAS PERSONAL ROBOTICS GROUP

Summer (May/June) 1994
NEWSLETTER

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Next Meetings: June 18th, 1994
July 16th, 1994
August, 1994

DPRG Meeting at the INFOMART
Rm. 1059
2:00 PM