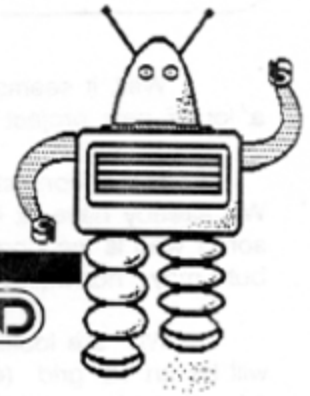# THE ROBOT COMPANION

The Newsletter of the Dallas Personal Robotics Group
March, 1990
Stan Spielbusch, Editor

MEETING MINUTES, ETC.

by Stan Spielbusch, Editor

No, you didn't miss an issue. I just couldn't get the February one out. I'm still spending about half of my time out of town, so what little time I have at home I hate to spend doing newsletters. Unless someone can take over once in awhile, I may just do one every other month for awhile (I'm lacking input, as well).

Thank you Walter and Bev, for your input this month. It would have been a very short newsletter, otherwise!

January meeting activities:

Elections were held, and the new officers are:
President: Brian Vaceluke
Vice President: Victor Sturm
Treasure/Secretary: Stan Spielbusch

Brian Vaceluke showed his Robie, Jr. modifications (added a microprocessor).

Roger Arrick showed his computer control for stepper motors, which he is marketing.

February meeting activities:

The Feb. meeting was very exciting! I hope the rest will be likewise. The main events were:

Brian and I showed Brian's Robie Jr. robot (modified) with my "wander" program. The program is very short, simple, and dumb. It provided a few laughs, however, and finally wandered out into the hallway and had to be chased down.

Brian also showed a new version of his "pendant" program for Robie, now written in assembler. It's more responsive and doesn't crash now from motor noise.

Brian submitted his home navigation system to the library. It will be kept as a separate disk, due to the number of files involved.

Many ideas for club projects were batted around, which I will describe in detail on the next page.

NOTES FROM THE EDITOR

by Stan Spielbusch

Well, it seems that Brian, our new president, is really going to get things going this year! We have a lot of new project possibilities:

Maze contest - August meeting! Now we have a deadline set, all we need is to fine-tune the details. We already have at least 3 "probably" entries -- myself, Brian, and another member (I forgot his name, sorry) who is working on another version of the Robie modification. A few other members show interest, but may not make the deadline.

We are looking for good design ideas for the maze construction. It has been "decided" that it will be an 18" grid (either 18" paths or 18" wall-center to wall-center), with walls 3.5" to 4" high (to allow 1-by-4's to be used if desired). A few construction ideas floated around, but an ideal solution is yet to be found. The desired criteria are:

* Modular, so it can be re-configured easily.
* Lightweight and small pieces, so a pickup and forklift isn't needed to haul it.
* Strong enough so the "mice" won't push it around or break it.
* Large enough for at least a 5-cell by 5-cell maze.
* Usable on either carpet (meeting rooms) or hard floor (garage/lobby).

Contest details and rules will be printed here when available. For the first contest, the rules will probably be simple -- as long as it's computer-controlled (not a puppet), it's legal.

HERO Jr cartridges -- Brian has volunteered to duplicate any Hero Jr cartridges (like the Basic and Programming cartridges) we can get. We also need to duplicate the RS-232 interface. PLEASE let us know if we can borrow yours! It will be returned intact.

Storyteller -- See the article following.

Compass for HERO 2000 (or any robot) -- Brian will design an interface for the Micronta electronic compass to work with the HERO 2000. Since it uses a parallel interface, it could work with virtually any robot. Walter and Bev are providing the materials (and will get the finished product). The November, 1989 issue of Radio Electronics has an article on constructing an interface for a Centronics-compatible printer port. This must be generalized for a simple parallel port, and will require the experimenter's card for the HERO 2000. Complete construction details will appear on these pages soon!

Checkers -- Bev is still interested in the checkers project. I would still like to see this happen, since it would make such a great demo.

Robot as a club officer or mascot -- We should have newsletter articles, or even club presentations, from the robot's point of view! Robot editorials ("Why does everybody make fun of my little twirly thing on top?"), product reviews ("This compass is great -- now I know exactly which lamp I just knocked over!"), project ideas ("I want to be an artist!"), etc. Would someone like to volunteer to be "the robot's voice"?

Well, I hope things get going like they should. At the very least, the maze contest should finally be a reality!

Article of interest

The C User's Journal, March 1990, has a terrific article 'An Introduction To Speech Recognition'. It's a very detailed yet readable guide to speech recognition algorithms and reliability, and even has a program listing! This article is typical of the great material I find in the C User's Journal. For subscription information, contact The C User's Group, 2601 Iowa St., Lawrence, KS 66047. Phone (913) 841-1631.

A HERO 2000 "STORY TELLING" PROGRAM

by Walter and Bev Bryant

I don't know how many of you remember a story telling program I wrote some years ago for the HERO I. (However, I do know many of you remember it because I'm still kidded about it often enough!) It was a relatively "simple" program, we will say. You can still find it in the club library on the HERO I disk if you look.

The story starts out (always) with "Long ago and far, far away, in Robby dream land... The I took several "subjects", such as R2D2, Robby, Darth Vader, etc., several "verbs" such as exploded, energized, captured, etc., and finally several "objects", such as space ship, the ray gun, etc., and used them in different combinations to make different "sentences". I used a random number generator to select the three parts of each sentence, the subject, verb, and object. Then, after several sentences were "created", I threw in some ad libs such as "meanwhile back at the ranch" and ...

I think you get the picture. Finally after so many cycles, the story "ended" (always) with "and they lived happily ever after". But let me tell you, the robot really did tell a different story every time, and I really didn't know myself what it was going to be. However, I did know that after a person listened to two or three of these "different" stories, they really would say "that really don't make a lot of sense".

"It started off well enough, but how did the robot explode the ship and then capture the ship?" If you are completely confused by now, look up the story program in the library. I fear for my life if I go into more detail at this point.

What Bev and I propose to do is to ask you, our fellow club members, to help us develop a better (hopefully much better) storytelling program. It would be nice if you has a HERO 2000 robot to work with, but all you really need is an IBM compatible computer with BASIC. Any computer with BASIC would work, for that matter. Instead of the robot "telling" the story, your computer could print the story for you to read yourself. However, after you help us develop the program we can all use it, and everyone who does anything with it will get credit for their inputs. In particular, I would like to ask people out of town, or out of state, or even out of the country, to help us with this project.

The story program could start with "basic short story rules", which will be applied in developing the overall logic algorithms you would use to write any coherent story. An introduction, a setting, major charters, etc.

People, places, and things of importance in the story can be assigned variable names. These variables can be defined in a short setup routine before the story starts. In this way, every story can be rapidly tailored for new groups of people with very little effort. Members of your family, the family dog, your father's old Rambler, anything could be used to make the story "more interesting".

"Major events" of the story should have a probability factor assigned to them. In this way, the story will develop in a more plausible and "real" fashion.

A "marker" should be assigned to consumable items such as bombs, space ships, people, etc., anything that can be "used up or destroyed". This will help preserve the logic of the story and prevent "exploded space ships" from being used again in the next sentence.

A "master score keeping routine" should be developed which can determine which side is "winning or losing" at any point in the story. The number of direct hits received, vs. the number of ships left in the fleet, vs. how well the other side is doing, etc., could be used to set the probability of the next series of events to be chosen. The ending of the story could also use this system to help develop/choose a logical and coherent story ending.

The robot could have numerous small body gestures to accent certain parts of speech and to make the robot appear more animated and alive.

These body gestures will be slow and subtle, to complement his general speech, but they may become rapid and extreme to accent the "exciting parts" of the story.

A random number generator can vary the exact selection of the body movements, yet they will always be chosen from the "proper and appropriate groups" for the excitement level of the story at that moment.

The story needs "<u>some</u> random characteristics" which cause it to vary the story every time and never tell the exact same story twice. <u>But</u>, the "artificial intelligence" algorithms will always develop a logical and coherent story which will amaze and amuse us all.

NEXT MONTH
by Stan Spielbusch

Meeting: Brian will probably bring Robie, Jr. again for more entertainment. We will further define the maze contest rules and discuss maze construction ideas. Other projects will be discussed further, and open the floor for new ideas.

Newsletter: Brian has promised an article with his Robie, Jr processor board details. With luck, we can get Ed Rivers to write something up on his home automation project. We may even have a "Voice of the Robot" article (and I need a better title for the column).

FROM THE LIBRARY
by Stan Spielbusch

Sonar Mapper/World Model Builder

Loren Heiny has submitted a new version of his sonar mapper program, as well as a nifty derivative program called SWORLD. This is a "sonar world model builder", and basically takes several sonar readings from different points and "compiles" an overall room (or word!) model. This is a great step toward autonomous navigation, since this model can be used as a pretty good estimate of the room shape. The robot could then decide where it can fit, and explore nooks and crannys, find exits, etc. This program is now also part of the SMAP (sonar mapper) disk.

Home Navigation

As mentioned earlier, Brian Vaceluke has submitted his home navigation diskette to the library. This has been discussed extensively in previous articles, and complete documentation is on the disk.

If you have a program to submit, put it on an MS-DOS format disk and bring it to the meeting or send to: Stan Spielbusch, 2404 Via Barcelona, Carrollton, TX 75006.

We currently have 6 disks in the library -- HERO 1 BASIC, HERO 2000 BASIC, HERO 1 Assembler, Loren Heiny's Eyesight program, Loren Heiny's Sonar mapper/SWORLD, and Brian Vaceluke's Homenav.

If you want a copy of a disk, send $3.00 per disk to Stan Spielbusch (address above), or bring a blank, formatted disk to the meeting and trade with me (or pay $2.00).

CLUB INFORMATION

The Dallas Personal Robotics Group is a non-profit organization of individuals interested in learning about personal robots, sharing ideas, working on projects, and informing the public about the world of personal robotics. We are open to anyone who has an interest in personal robotics, whether or not they currently have a robot, and whether or not they have any knowledge of robotics.

To become a member and receive the newsletter, have access to program library, and be involved in our monthly clubs and user's labs, simply fill out the form below, and send it with $10.00 to Stan Spielbusch, Treasurer (address below).

If you are interested, but not sure you want to be a member, feel free to visit our meetings. If you like, we can send you a sample issue of the newsletter.

Tentative Meeting Schedule (1990)

Mar 10   Apr 14   May 12 or 19   Jun 9

Meeting times and location: 1:30 P.M. at the Dallas Infomart.

Club officers:

President: Brian Vaceluke (214) 298-9954   Vice-president: Victor Sturm
Treasurer and Secretary: Stan Spielbusch (214) 418-8934

Back Issues

Back issues are now available in four sets. Each set is $8.00, plus $2.00 postage and handling if ordering by mail. Set 1: From the start of the club in 1984 through 1986. Set 2: 1987. Set 3: 1988. Set 4:1989. Issues from 1990 are $0.50 each, plus $0.25 p&h. Contact Stan Spielbusch, Editor, 2404 Via

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MEMBERSHIP APPLICATION
Dallas Personal Robotics Group
c/o Stan Spielbusch 2404 Via Barcelona Carrollton, TX 75006

Check one: (   ) Renewal   (   ) New Member   (   ) Info Change   (   ) Sample issue request

NAME (please print)_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

HOME PHONE (____)____-_____   WORK PHONE (_____)_____-

TYPE OF ROBOT (if any)_____

TYPE OF COMPUTER (if any)_____ MODEM:_____ BAUD

Do you want the above information available to other members?_____
(We do not sell our mailing list to businesses, but it is available free to all club members.)