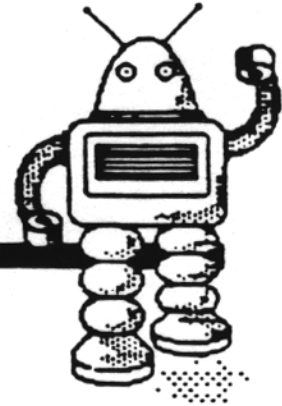
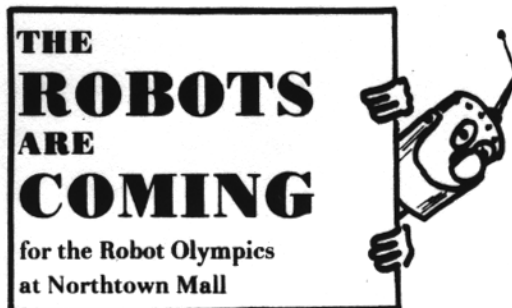


# THE ROBOT COMPANION



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## THE ROBOT OLYMPICS AT THE NORTH TOWN MALL

The Olympics were great! On October 19, at the Northtown Mall; we had races, we had a talent contest, we even had a beauty contest!! We had a mini-robot demo, we had a homemade robot demo, we even had a western robot gunfight and shootout down at the old saloon!! CNN (Cable Network News) was there to capture the whole thing with their TV camera crew. Everyone had a grand time (except maybe "Black Bart", there towards the end) and the crowd loved it!!!

Third place in the race was Charlie Roof's robot. Second place was Bud Collins' robot, Chips. And first place was Bob Winningham's robot, Freddie, with the shortest time back and forth through the track at 31.4 seconds.

Third place in the talent contest was Ed River's robot, who juggled. Second place was Joe Rowe's robot, Shubash, who did impersonations. And first place was Bud Collins' robot, Chips, who sang songs.

In the beauty contest, Joe Rowe's, Shubash, dressed as a Gremlin, came in third. Second place was John Curtain's homemade robot, Joanne Johnson, the "beautiful woman". And first place was Bud Collins' robot, Chips, dressed as a witch, complete with shrieking screams and "Medusa" dark red piercing eyes.

Tod Anderson did a fabulous job demonstrating 17 different Movit robots at once, a near impossible feat.

Jeff Boughton demoed "Herbert-1", his homebrew robot. Herbert-1 uses the computer language Forth for its command interpretation, and a 6502 Assembly-code for multitasking hardware control.

Paul Swan's brainchild was to produce a jail and a western saloon. I should mention that he produced these works of art before even joining the club. His efforts set the stage for a western gunfight shootout between "Black Bart" and the "Marshall". The Marshall was played by Ed River's robot, and Black Bart was played by Walter and Bev Bryant's robot, Robbie. Joe Rowe wrote the script and also developed the duel programs for the robots.

All of the above club members who placed in any event won a metal donated by the Northtown Mall and Bud Collins, who won first place in the beauty contest and second place in the race, also won the Omnibot. In addition, two Omnibots were given out to the public at large as door prizes.

The CNN (Cable Network News) TV camera crew shot virtually every aspect of the Robot Olympics. Then, Sasha Foo, of CNN in Atlanta, Georgia, interviewed Robbie the next Friday at Walter and Bev Bryant's home in Lewisville.

CNN is producing a five-part news report on robotics. It will include an interview with Dr. Isaac Asimov, author of "I, Robot". Dr. Asimov is a world-known author of over 200 books and also articles with a wide range of subjects. These news reports will be broadcast on CNN December 2 through December 8. The report on the Dallas Personal Robotics Group and Robbie will be shown on December 3.

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I WOULD LIKE TO WELCOME PAUL SWAN TO THE DALLAS PERSONA ROBOTICS GROUP. PLEASE NOTE THE NUMEROUS CONTRIBUTIONS HE HAS MADE TO THIS ISSUE OF THE NEWS LETTER IN HIS ARTICLES AND TRULY PROFESSIONAL ROBOT CARTOONS. PRVIOUSLY A SCIENCE TEACHER, HE BECAME A FULL TIME MAGAZINE CARTOONIST SEVERAL YEARS AGO. HIS WORK HAS APPEARED IN HUNDREDS OF MAGAZINES AND NEWSPAPERS, BOTH HERE AND ABROAD.

PAUL LIVES WITH HIS WIFE IN DALLAS. HE IS A MEMBER OF THE MAGAZINE CARTOONISTS GUILD, AND WRITES A COLUMN FOR CARTOON WORK. HE IS SURE TO BE A TRUE ASSET TO THE CLUB.  
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# RANDOM ACCESS

By Paul Swan

This surely has to be the oft-proclaimed "Year of the Robot"! The various catalogs pouring into our house are loaded with every conceivable item tricked out to look like, or act like, a robot.\*\*\* Radio Shack has their dandy little "Armatron" robot arm on sale through Christmas for \$29.95. (This is the one that some have called "the best robot arm for under \$1000!". Seems like some of you wizards could figure a way to utilize one or two of these to really come up with a nifty home-brew critter!\*\*\* It appears that the old AI prediction that a computer program would be the world's chess champion is getting closer to reality. The October 26th issue of Science News reports on the results of the North American Computer Chess Championship in October. A program called "Hitech" blew all the others away, the secret being its use of 64 separate IC chips running in parallel! It easily trounced the Cray Blitz program, designed to run on the supercomputers, and won over two out of three human chess masters. Believe it or not, a program running on an Apple II placed third! Hitech's performance rating is shown now as 2530, putting it within striking distance of World Champion Anatoly Karpov, who is rated at 2705. Think what a Hero could do with 64 ICs! (Think what I could do with the same!\*\*\* Tomy has expanded its line of robots to include "Chatbot", which seems to be a sort of "Verbot" with tape recorder on board. The original Verbot is still being offered at about \$50 from the discount houses such as Service Merchandise and Best. The Tomy Omnibot is still in production, but the top of the line in the series is now the Omnibot 2000, which has articulating arms and a head with some sort of primitive sensor system. This little job goes for \$400 from the discounters. Speaking of Tomy, they seem to have sold the "chassis" units from the Omnibot to others who have modified the head so that it contains a voice-recognition unit. The robot can be programmed by voice control, which sounds good on paper, anyway. This new unit is called a "Hearoid". (They should at least get some sort of prize for not using "bot" in the name somewhere! These are available for \$400 plus another \$125 or so for the acoustic sensor, Ultrasonic sensor, photo sensor, and



vacuum attachment kit, from Markline, P.O. Box C-5, Belmont, MA 12178. If you don't get their catalogs, and if high-tech goodies cause you to hyperventilate, write them and ask to be put on their mailing list. \*\*\* Another outfit that might be the answer to some of your needs is Edmund Scientific, 101 E. Gloucester Pike, Barrington, NJ 08007. They are a good source of all sorts of exotic gee-gaws that might come in handy if you are seriously into robotics. They also have the Mov-it type obstacle-avoiding robot kits for \$19.95, and kind of Jelly-bean looking programmable robot for \$40. Home-brewers might be interested in their robot motor (#K31,827) which utilizes a magnetic clutch and reverse power at \$4.95.\*\*\* Yet another company with the potential of furnishing happy times for little minds is The Sporting Edge, 22121 Crystal Creek Blvd., S.E., Bothell, WA 98021. Their current

catalog offers "GoBall", an R/C ball which storms around the house under your joystick control. (This might tend to get a bit boring after you have scared the whiskers off the dog a couple of times.) Also from this same source is "Pester", another robot-like entity. It looks like a small cat, and responds to audio signals. Its prime use would seem to be to discharge unwanted C cells. \*\*\* A journal you may not know about is Smart Machines, a monthly pub dealing with AI and robotics. It's a tad pricey at \$48 per year, but to make up for this, it's not very "slick", being reproduced from typewritten copy, no photos, etc. Still.....\*\*\* Personal Robotics Magazine seems to have rolled over and died. This was a dandy little pub, and I hate to see it fade away.\*\*\* I believe that Interface Technology is still offering a monthly newsletter for \$6 dealing with the Hero hardware and software they offer. They are at P.O. Box 3040, Laurel, MD 20708.\*\*\* A company that was looking for program authors for Hero 1 is at 410 Sheridan Ave.-106, Palo Alto, CA 94306. (The name is Probotic Software).\*\*\* An outfit that produces all kinds of good stuff for the Hero is Micromation, Inc., 9104 Red Branch Rd., Columbia, MD 21045. Might write them for a catalog.\*\*\* If any of you out there happen to be operating the steam-driven, coal-fired model III (or I) TRS-80 computers, give me a holler at 243-4677, and I'll give you a potload of various AI programs, and also the set of programs from the TAB books on robotic simulations for the computer. I can work these up either on disk or tape.\*\*\* I can hear Walter beginning to breathe heavily, so I'll shut down this first Random Access. If you feel this hodge-podge has been of any value to you, let your editor

know, and we'll make this a regular feature.



Paul Swan



## CONTINUOUS CONSCIOUSNESS FOR THE HERO 1

by Joe Rowe

This article describes a HERO 1 BASIC program, currently under development, which will be made available to DPRG members through the computer bulletin board. It will be described in more detail at the meeting on November 26, 1985.

The programs we have developed for the Hero 1 robot have until now been essentially single purpose programs which were manually initiated. The program described here transforms a Hero 1 into a continuously functioning robot capable of performing a large number of pre-defined tasks at appropriate times without "human intervention." It gives a Hero 1 what appears to be a "continuous consciousness", waiting to perform its' next scheduled task at the appropriate time unless instructed otherwise. The program provides a time-driven event scheduling mechanism which can be easily expanded to enable the robot to do a wide variety of things.

The "SCHEDULER" permits the execution of pre-defined Hero 1 BASIC subroutines on a date/time schedule controlled by the user. The user may interactively schedule events or change previously scheduled events at any time while the program is running. Each day at midnight, the program will scan the table of scheduled events and determine which ones should be executed that day. The events to be executed that day are placed on the active event queue in chronological sequence.

The robot then goes into the scheduled event mode, checking the current time against the next active event. It will sleep for thirty second periods between checking the clock. Before checking the clock, the program will obtain current sensory values (light, sound, motion and

ultrasonic ranging) and also scan the keyboard to determine if the user wishes to enter another mode. When the time for the next active event to be executed has been reached, the appropriate subroutine is called with the specified parameter value and the time for the next active event is checked.

Standard common subroutines are included in lines 2000-4990. The user must append his subroutines to the end of this program. Line numbers 5000 and above are available for this purpose. The user should carefully record the line numbers of each routine since these must be entered to define or modify the schedule.

The robot's real time clock must be set in 24 hour mode for this program to work properly. All times are specified in a four digit "HHMM" format. Leading zeroes must be included when entering times. Dates may be specified in any of the following formats:

1. Executes one time only at the next occurrence of the time.
2. Executes every day.
3. D (1-7) - Executes on a certain day of the week every week.
4. DD - Executes on a specific day of the month every month.
5. MMDD - Executes on a specific day of the year every year.
6. WD - Executes on day "D" of week "W" of every month.
7. Executes on every weekday (M-F)
9. End of event entries

(continued on next page)



# 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 his 1921 play "R.U.R." (which stood for "Rossum's Universal Robots". The name comes from the Czech word "Robota" which means work, and referred to the "mechanical workers" who were produced, and then turned upon their human makers. The concept of the robot is much older, of course, appearing in many myths from the Greeks and Romans, in the form of mechanical slaves, talking brass heads, etc.

There are a number of other words we use that are frequently confused with "robot", and perhaps some definition is in order.

The word "Automaton" refers to a mechanical construction, usually shaped to resemble a human or an animal, and which performs some task or series of movements which closely resembles that performed by the living being. Many automatons were constructed by craftsmen of all countries, but especially in France in the 19th century. A few of these are still extant in museums, such as Henri Maillardet's famous "writer", to be seen in a French museum. An automaton has no autonomy, i.e. it performs its maneuvers, but has no way of sensing the real world, nor does it have any means of acting on the input if it did. Some of these machines are very sophisticated and, to the naive observer, appear to be "intelligent". Many modern toy "robots" are automata.

Another word we use is "android". This refers to a machine, perhaps an intelligent one, which is shaped like, or behaves like a human. It is an anthropomorphized robot. C3PO in Star Wars is a good example of an android.

The word "humanoid" is sometimes used to refer to robots, but this word only means "human-like". It refers to a non-human "thing", sometimes a machine, which is recognizable as being constructed on the same general plans as a human, but is not a human. An android is humanoid, but so are the "pilots" of the



"I'm not sure which one's intelligence is the most artificial."

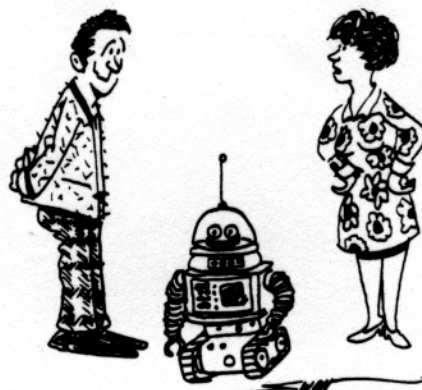


UFOs sometimes reported by the "contactees".

If we want to be precise, (and, perhaps, pedantic) most of the "robots" on the market are not truly robots. The Hero is, but the Omnibot, for example, is not. To be considered a true robot, the machine must be autonomous, i.e. it must have the potential to be programmed to make decisions based on the changing conditions in its environment, and implement these decisions by changes in its behavior. Because of this ability, the robot becomes something a great deal more than a simple machine. A machine, from the simplest to the most complex, is predictable. If you know the position of all the parts in an auto engine, for example, you can predict exactly what each part will do, and

where it will be, in the next given instant of time. This is not the case with the true robot, because changes in its environment cause it to be constantly updating its behavior to compensate for these changes. The concept of autonomy excludes a great number of what we call robots, such as the "showbots" seen so often on TV and at commercial promotions. Without the hidden human as the operator, the "robot" becomes simply a plastic and metal Mortimer Snerd. The robot, on the other hand, is theoretically capable of taking care of itself in the real world, assuming proper programming and mechanical capabilities. In order to qualify as a true robot, the machine need not have a brain on board, but must have some sort of data-handling link available.

As the robots become more sophisticated, many philosophers are beginning to feel that the logical end-point of their development will be a form of "life"; not life based on "meat", but on metal and semiconductors. Of course, if life is defined as having to be based on our familiar carbon chemistry, then the robot, by definition, cannot be a living thing, but most feel that there is no inherent reason for this caveat to need apply. At some point, the robot will have progressed to the point that no observer can devise a test to tell whether he is dealing with a machine of equal or superior capabilities to a human, or to an actual human. At this point, man may find that he has succeeded in creating the creature destined to replace him on his home planet. (This might be worth considering next time your "pride and joy" runs into the door or spills a full Coors on the carpet!)



"I wish you'd look at me like that sometime!"



## HIGHLIGHTS OF NEXT MEETING:

MEETINGS ARE HELD EVERY THIRD SATURDAY OF EACH MONTH AT 3:00 PM IN THE HEATH COMPUTER CENTER IN DALLAS, TEXAS.

- O JOE ROWE - THE ULTIMATE MASTER TIME PROGRAM, "THE PROGRAM TO RUN ALL OTHER PROGRAMS". THERE WILL BE A DEMONSTRATION AND COPIES OF THE PROGRAM - THIS WILL MAKE YOUR ROBOT'S DAY, AND WEEK, AND MONTH, AND ...
  - O JEFF BOUGHTON:
    - A) DEMO OF "HERBERT - 1", A HOME GROWN ROBOT.
    - B) THE ADDITION OF THE NEW RADIO SHACK "SPEECH TO PHONEME CONVERSION CHIP", TO A HERO 1. NEVER HAVE TO MANUALLY INPUT PHONEMES AGAIN!!
  - O WALTER BRYANT - TREASURER'S REPORT, THINGS ARE SUDDENLY LOOKING A LOT BETTER AFTER THE "DONATION" MADE BY THE NORTHTOWN MALL.
- 

YOUR IDEAS AND ACTIVITIES SHOULD BE SHARED HERE. PLEASE CALL THE EDITOR AT T(214) 436-6225 AND LIST YOUR PROJECTS, LEADS, SUGGESTIONS CONCERNS, QUESTIONS, ETC., ETC...

