

The Quasar Industries' Robot

A Dream That Came True

By Gene Beley

Android Amusement Corporation

Robots are going to be part of our everyday lives, and Quasar Industries seems to have a head start on getting us there.

Gene presents the story of Quasar in a light-hearted fashion, and whets the imagination for future developments.
—Editor

Nine years before *Star Wars* jetted through the movie theaters of the world, introducing two lovable robots, Quasar Industries, Inc. of New Jersey gave birth to a full-size working 'droid, Klatu. Even though Klatu was the result of more than 40 designs submitted by an eight-man team of engineers and scientists, of whom nearly all succumbed to death or serious illnesses before his successful completion, there was no worldwide media fanfare. In fact, Klatu was quickly put to work to help pay R&D costs. From the very beginning, Quasar Industries began leasing the robot out to corporation and others for an attention-getting marketing tool.

To this day, Klatu and his 31 brother and sister robots lend their 15-square-foot conical-shaped bodies for displaying various graphics and logos of major corporate clients like Panasonic, Ingersoll-Rand, I.T.T., major banks, and others who can afford their star-billing rates. Currently, they are leasing for \$700-\$1500 a day, plus expenses. These robot stars fly first class on commercial jets when they travel to engagements. Moreover, each robot is accompanied by two robot technicians wherever they travel.

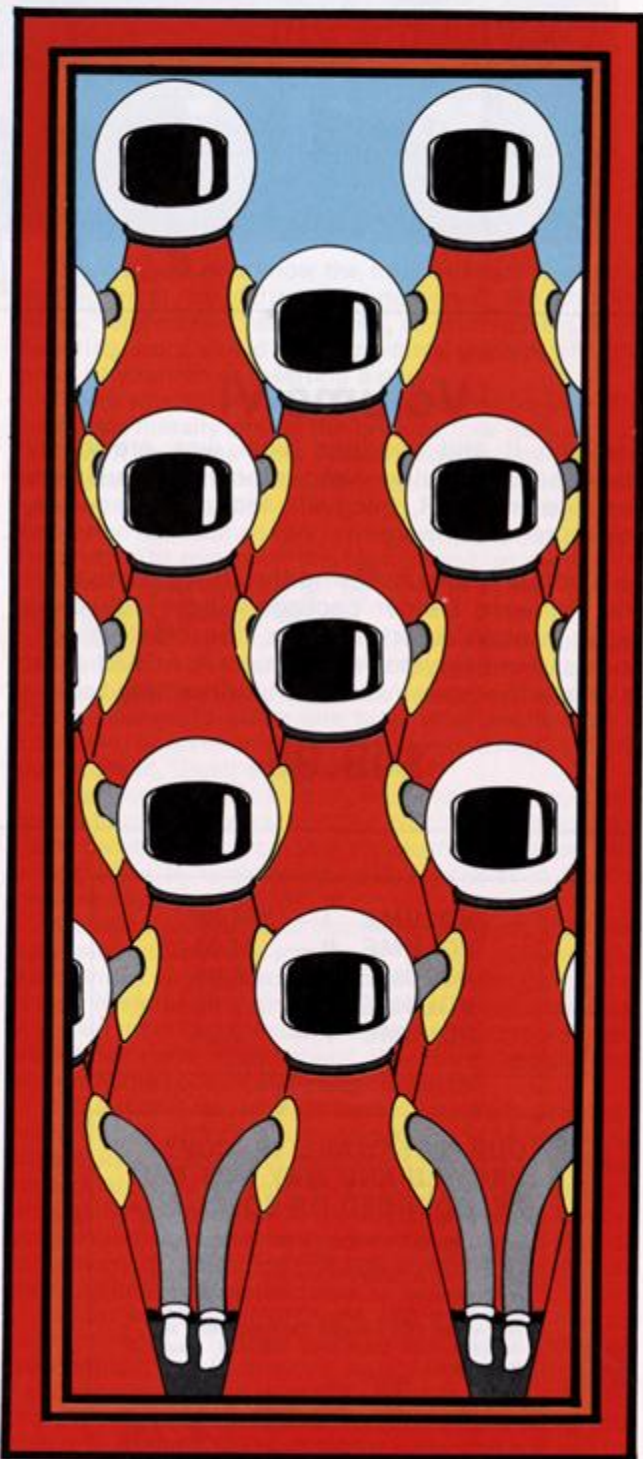
Quasar Industries now has 32 working 'droids, which they call Sales Promotional Androids, or SPA's for short. In addition, Quasar Industries has working prototypes of the Domestic Android, robot-servant, which will be marketed within two years for approximately \$4,000; a seven-foot high security-guard robot with a \$75,000 price tag; and a Para-Medic Robot that will work in hospitals that can afford the \$50,000 tariff.

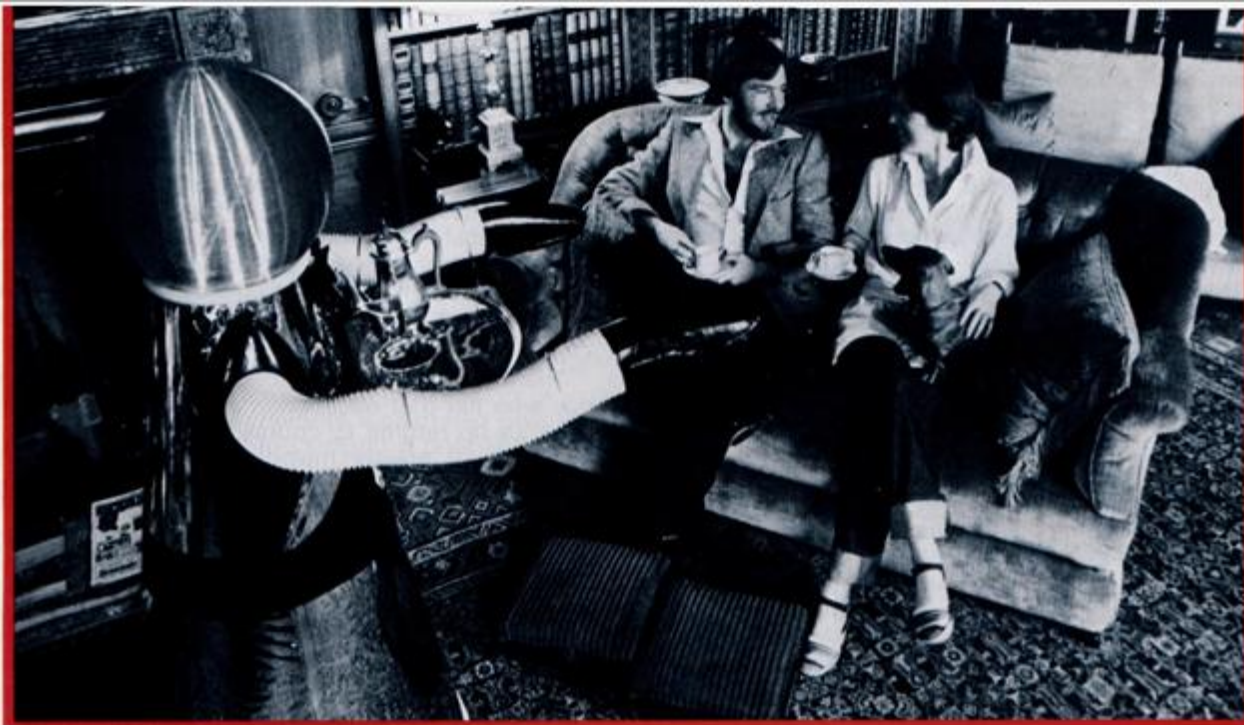
HOW IT ALL BEGAN

Anthony Reichelt, who has an engineering, design and marketing background, started to make a 30-inch toy robot that would speak about 25 words on cue. He quickly learned, after much research, that would be too expensive to market as a toy. However, he decided there was a market for domestic androids.

"We began with an eight-man team of scientists and engineers who set goals of developing three basic robots: the Domestic Android, Century guard robot, and the Sales Promotional Android," Reichelt said. "Due to the state of technology eight years ago and the economic factors, the Sales Promotional Android received the top priority.

"In 1968 we produced the first SPA series robot. To give you an idea of how far we've come since then, we are now working with our SPA 20 series, which represents many technical advancements."





That first eight-man research and design team was made financially possible through the predecessor company and a small stock issue in New Jersey to form Quasar Industries, Inc. "We organized for the specific purpose of making mechanical humanoids," said Reichelt, "and that has continued to be our exclusive business to this very day."

The SPA's are five feet, four inches tall, which the company found was the best height for maximum psychological appeal in promotional events. The SPA's weigh 240 pounds, which make them light enough for almost any method of travel. The conical-shaped bodies provide the proper balance necessary for working salesmen 'droids to operate in a crowd without tipping over.

Quasar Industries' robots do not have any facial features. Reichelt's staff long ago learned, though, that there was a psychological advantage: their robots didn't get type-casted into a set image. They were identified with the sponsor.

Underneath the exterior costumes and "stage" names beats the heart of Klatu's Q-16, special robotic computer, designed from scratch and capable of voice recognition and audio responses. Reichelt explains that the SPA rolls on hidden tires underneath its conical-shaped body and can go in any direction at various speeds. Arms, elbows, and hands are fully programmed and can operate independently. Though the SPA can't see in the same sense as humans, its sensors detect shades of light to determine mass. In an uncluttered area, the SPA's can move with great freedom. When the crowd gets too big, it will go to sensory overload, stand still, until it is able to act again. Air-filled rubber rings encircling the conical base of the robots provide sensors to prevent bumping into objects. The SPA has a top speed of about 20 miles an hour.

Quasar Industries started to design a five-digit hand but rejected it because of overall cost and power requirements to build six motors necessary to operate each assembly. The final two-digit system in use today required almost one year of revisions before it was perfected. The steel tube arms with elbow, wrist, and motor drives are covered with flexible tubes (that look like common vacuum cleaner hoses). Original additional movements included rotation of the head and waist, but have been rejected for power, space, and practical requirements.

"No one will ever know the total frustration and discouragement we suffered in our small lab creating Klatu," sighed Reichelt. "Weeks, or even months of exhausting work would be completely wasted with the push of a button or inserting a plug.

"There was no manual or reference book to follow. The team was literally writing the book as they went along."

Thus it becomes more understandable why Reichelt attempts to maintain company secrecy about the inner-workings of his robots. Although he has made some television appearances and gives occasional interviews, he prefers to remain in the background, or out on the road with his robot teams, as "that is where the real R&D is being done today."

The original research team was hampered by constant daily problems of where to find parts, system adaptation and body design. But these were only minor problems. "Fate seemed to strike one blow after another, as if someone, or some unknown force, was trying to block our progress," Reichelt remembers.

"The physicist working in the area of subsystems compatibility suddenly died," he continued. "Before the team could recover from that shock, the professor, with a Doctorate in Engineering, and specialist in inertial guidance systems, went blind."

More medical problems hampered the team. The laser specialist developed a serious kidney disease; the mechanical engineer working on the interrelated mechanical systems retired because of multiple sclerosis. And two more members of the team, the research specialist for parts analysis and the power applications engineer, died before Klatu was completed.

That left only two original team members to see Klatu leave the lab under his own power. Inside he contained the desire, dreams, and dedication of eight human beings. Klatu finally could walk, talk, and perform well enough to be leased out for promotional events. As time progressed, the voice was further developed to include inflections. A lightning-bolt-like streak of light illuminates its head when it talks.

Quasar Industries feels, now that the public has accepted robots, it is time to move into Phase II of their master-plan. The Rutherford, New Jersey robot factory is now gearing down to manufacture the Domestic Android (trademark) within 18-24 months. Reichelt projects they will produce 125 such robots a day that will sell for

approximately \$4,000. The Domestic Android will be programmable via a computer control on its right hand to serve dinner, vacuum, baby-sit, answer your front door, or serve drinks. A 250-word vocabulary will be sufficient to impress your friends and insult your enemies.

Of course, this is straight out of the first chapter in Isaac Asimov's book, *I, Robot*, which tells about the robot babysitter. The child's mother grew concerned when she felt the child should have something like a dog that could return love and pressured her husband to get rid of the robot. The child became despondent over the loss of her robot friend, and the story continues about the search for her mechanical babysitter.

Perhaps the answer, according to a poem by Ray Bradbury, would be a robot grandmother, one who could give "equal love" to her grandchildren. Bradbury, the science-fiction author and father of four daughters, wrote "Robot Grandmother" while observing the personal frustrations of parents trying to give equal love.

REACTIONS OF HUMANS TO ROBOTS

In Los Angeles, California, senior citizens visiting a department store where the SPA, Klatu, was modeling jackets for a ski parka company, looked in disbelief at what they were seeing. "What is it?" one dares to ask a sales clerk.

"A robot," the clerk replies, with a wide smile, rather nonchalantly.

"Now I've seen everything," mumbles one of the senior citizens, shuffling away. "Now I can die in peace."

In Scranton, Pennsylvania, at a hospital charity benefit, the SPA was whirring up and down the hallways, in and out of the rooms. The robot was playing and joking with the children. However, upon arriving at a room marked "Do Not Disturb," Robot Master and Quasar Industries' President Anthony Reichelt asked a doctor what was wrong with the child in the room. Reichelt learned the child had been in an auto accident. Although the boy had recovered from a coma and was capable of speaking, he had chosen not to speak, probably because he was still in shock.

"The doctors and staff psychologists hadn't been able to get the boy to speak," Reichelt recalls. "I obtained his permission to allow the robot to go into the room with the boy, alone."

"Why are you feeling so sorry for yourself?" the robot asked the boy. And then they began trading insults, like the robot's threatening to "put tire tracks" on the boy if he didn't begin speaking. Within 30 minutes, the boy was babbling away with the robot.

This rewarding experience led Reichelt to observe the need for a Para-Medic Robot, which he now has built and trademarked. It is designed for doctors to use in psychiatric cases, especially with children, and will be specially padded and easily programmed by the doctors behind a one-way mirror.

The preceding represent the wide range of emotions humans project upon seeing a real robot for the first time. Reichelt, who understandably prefers to travel with the robots, versus "flying a desk," could probably write a book on the reactions of humans to robots over the past nine years.

On the more fun side of the fence, the London Daily Mail newspaper invited Quasar Industries to bring the Domestic Android prototype to Great Britain. "We had the robot buy his own ticket at the airport," chuckled Reichelt, "and board a British Airways jet to London with myself and the London Daily Mail photographer."

"We were about 2,000 miles out over the Atlantic Ocean and the stewardess was getting ready to serve breakfast. Phil, the photographer, asked me to have the robot serve breakfast. It took several minutes to pro-

gram the robot, and it began going up and down the aisle, serving grapefruit to passengers that morning."

"And how was your flight, Aunt Maude?" Britishers were probably greeting relatives landing at the airport.

"You won't believe it — a robot served breakfast for the stewardess this morning," passengers were heard to reply. Just as the relatives or friends were wondering if they should call a doctor, off walked the robot, with the photographer taking pictures. Few celebrities get the kind of attention a robot commands upon landing at a major airport.

OCCUPATION: ROBOT TECHNICIAN

There are a handful of humans in the United States today who list that occupation on their official Internal Revenue tax returns. Of course, 25 years from today, the number will greatly multiply. In the not-too-distant future, colleges will undoubtedly institute formal degree courses in robotics — a word barely coined now.

The entire technology is already taught in colleges, but no one has put it together in a precise course. It would undoubtedly consist of computer and mechanical technology; physics, geometry, and a wide degree of experimentation, according to Anthony Reichelt. Although he is hesitant to divulge his technicians' names "because the press would interfere with them getting their normal work accomplished" and "competitive reasons in a dog-eat-dog world," he consented to divulge his training system to INTERFACE AGE for this special issue on robotics.

"We've taken people from all walks of life — not just the scientific or technical fields," Reichelt begins. "An example is an oceanography student I met who took a liking to the robot. We hired him part time on his college vacations, and he eventually changed his major to computer technology. He graduated and now works full time for Quasar Industries."

"A beginner starts as a trainee, whom we call a Manufacturer's Helper in the shop. We tend to develop a specialization within each person. Eventually, they reach the level of Assistant Monitor Technician, which is simply an Assistant Technician."

"Next comes Technician, then Command Programmer. The Command Programmer is in charge of one or more shows where the robot is appearing."

"After about 4,000 hours of actual robot performing time, the accompanying Command Programmer is eligible for the ultimate title of Robot Master. He then may have as many as four different Command Programmers under his supervision."

Reichelt himself wears a gold "Robot Master" emblem, made especially for him by a jeweler in Beverly Hills. He is the greatest task-master and perfectionist of them all. When they are traveling on the trade show and promotional event circuit, although they may enjoy attending client parties at night, Reichelt, the Chief Robot Master, can always be seen in the wee hours of the morning, back in the motel room, touching up small scratches on the robot's conical-shaped body with a can of spray-paint and checking out the mechanical functions for the next day's show. Naturally, there is an element of show business to the bookings, scheduling and behind-the-scenes somewhat grueling life on the road. Reichelt, who is fortunate to have wife Eileen as Marketing Director at the New Jersey headquarters, is proud of their record: in nearly 10 years, they have never missed a contracted performance.

This has not been easy. One time, with a show scheduled in Chicago, he told his two robot technicians to leave New Jersey Friday in a van with the show robot. "Although the show wasn't until Monday, I told them to get there, set up and then fool around."

"They called me in Pennsylvania and said they were

snowbound. I asked them the telephone number in the pay phone booth and told them I'd call right back.

"I got out maps on our kitchen table that night and began pinpointing their location. I called them back and told them to double back and take a road south."

"How far South?" asked the technician in the cold, snowy phone booth.

"Until you run out of snow," Reichelt replied in his typical fashion.

Fortunately, the technicians had credit cards and some cash to sustain them. Reichelt ordered them to call him at his home throughout that night, every hour as close to the hour as possible, so he could calculate the speed of their travels and project their progress.

"I called a friend that operates a chartered Lear jet service," continued Reichelt, himself a pilot and aviation enthusiast. "I told him to have the Lear jet at a particular airport, ready to go to Chicago, in case we needed it. As it turned out, my crew was able to circle around the snowstorm by surface roads and made it to Chicago in time for the show."

This type of philosophy and perfectionism has gained Quasar Industries the great respect of clients, from a cross section of smaller companies that use the Sales Promotional Androids to compete for attention with the corporate giants, to the Fortuna 500 type clients themselves, who love the robots.

Although it isn't something Quasar Industries will readily publicize, the life of a robot technician can be quite glamorous on the road. Since the robots get star-billing fees and fly first-class to many destinations, they frequently work for clients who stage elaborate parties at night. Even if the robot doesn't attend, the technicians are almost always invited. Another fringe benefit, not listed on the Internal Revenue tax returns, are those beautiful models most companies hire in trade show booths. You see, robots are very good at getting the pretty young gals turned on with come-ons like, "Okay, Baby, give me a kiss." But it still takes the human touch to satisfy those very human desires. Although it isn't in the basic training course, Klatu has told INTERFACE AGE the younger technicians are very good at taking over where he leaves off.

WHAT'S AHEAD FOR QUASAR INDUSTRIES' ROBOTS?

"Bubble-memory, as soon as it becomes practical from a cost standpoint," commented Reichelt. "This technological advancement will greatly increase the capacity of the robot and its ability to do different things."

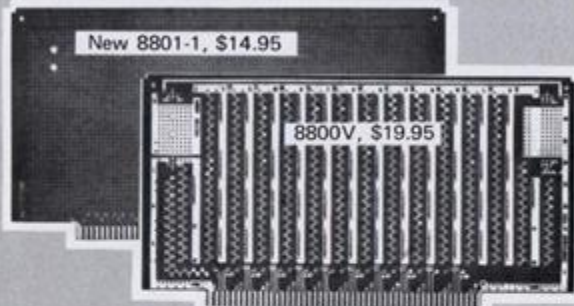
Century I, a robot designed to function as an automated security guard for banks or military installations, was recently introduced at the annual seminar of the American Society for Industrial Security. At 7 feet, 650 pounds, with a bullet-proof exterior and equipped with all sorts of "restraining systems," Century I means business. Its single purpose will be to find and immobilize intruders. Sensors in the robot can detect movement, body heat, or noise, and then begins stalking the human. Reichelt said its restraining systems are "nonlethal."

So when the day comes that Klatu may gain his deserved super-star status, or his descendants start a robot rock group, they will have their own robot security guards. With Quasar Industries, such science-fiction sounding products exist today and will be in the marketplace sooner than you may think. As for the robot rock group, keep tuned into your local radio and TV stations. And remember, INTERFACE AGE predicted it, in April, 1978. □

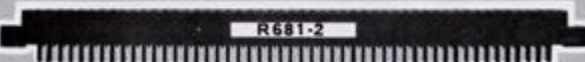
Anyone who might be interested in finding out more about the Quasar robots can contact Gene Beley at: Android Amusement Corporation, 2324 Lenta Lane, Arcadia, California 91006, (213) 445-5330.

—Editor

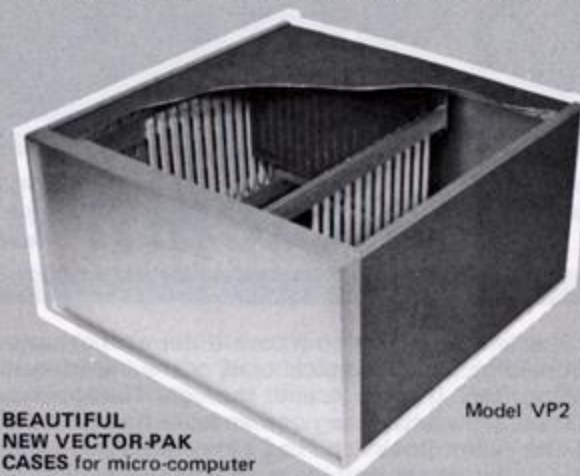
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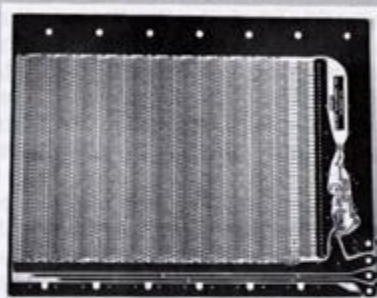
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