Tireless robot is BMC's model worker

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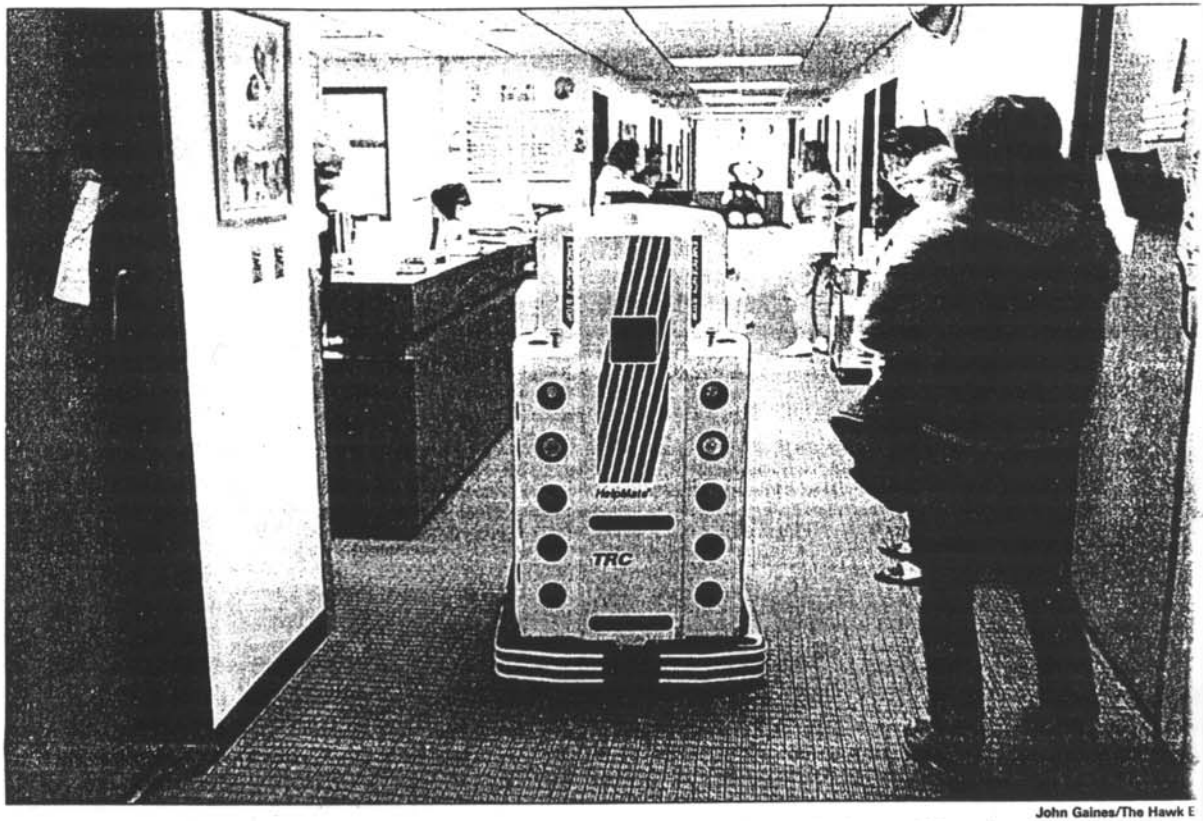
The Hawk Eye



John Gaines/The Hawk E

A 575-pound robot draws stares as it makes a trip through Burlington Medical Center's pediatrics ward. The robot delivers food and supplies throughout the hospital.

He gets paid $5.25 an hour, gets no benefits, is polite and never whines, especially because he works 24 hours a day every day of the year — all without ever requesting a break.

However, the hitch is that Burlington Medical Center's newest "worker" needs his battery changed every 12 hours. Meet BMC's new robot as he makes his rounds:

"Please stand clear," the as-yet unnamed tank of electronics intones in a computer-generated male voice if he crosses paths with humans in BMC's corridors. With 18 ultrasound and infrared sensors strategically installed across its 575-pound frame, the robot can "see" everything around it.

The robot makes rounds from 6 a.m. to 6 p.m. for the dietary department, and from 6 p.m. to 6 a.m. helps dispatch supplies and drugs for the supply, processing and delivery department.

The 5-foot-tall steel and fiberglass robot has an approximately 3-foot-by-2-foot storage compartment on its back that can accommodate a half-dozen food trays or other larger items.

Dick Hatfield, BMC's vice president for community relations, said the robot has been programmed to travel from the dietary or supply departments to a dozen or so locations throughout the hospital.

During a recent test, the robot ran a food tray from the dietary department to the 3 West patient floor.

After the food tray was loaded into the storage compartment, the robot was programmed for its destination. After accepting the information, it politely responded, "Thank you," while a message "Planning my route" appeared on a screen on the control panel. Then it took off, with an orange light flashing.

BMC's robot uses only one elevator in the building. From the rubber-coated antenna on its shoulder, a radio signal is sent to the elevator outside the basement pharmacy even before it starts rolling from the dietary department's doors.

Basically, the robot seizes the elevator for its use after all the passengers have disembarked. When it knows the elevator is empty, the robot positions itself in front of the double doors and awaits them to open.

"Please stand clear," it says as the elevator doors open. However, if there already are passengers on the elevator, it won't board and will wait until it empties once again. Hatfield explained the robot was programmed that way so it would not interfere with patients or supplies being transported.

After rolling onto the elevator, the robot turns around to face the door. It has no problem with passengers joining it for the ride, though.

By this time, the robot already has sent a signal to the elevator indicating what floor it needs to visit. When the doors open, it rolls down the corridor.

The robot stops at the administrative control center at 3 West and announces itself to the clerk and nearby nurses who are instructed to remove the food tray. A button is pushed to return the robot back to where it came from.

If it encounters anyone standing in the hallway, the robot politely asks the person to move from his path. Because of his built-in sensors, it can maneuver around people and objects.

If the robot encounters closed doors, such as at the basement pharmacy or in obstetrics, it is programmed to send a signal to ring a bell inside the closed doors to alert staffers of his arrival.

After arriving back at basement dietary department, the robot pronounces: "I have completed my mission. Please examine my compartment."

Hatfield emphasized that the robot is not replacing any workers at the hospital.

"It's making services more efficient," he said.

Before the robot started a three-month trial earlier this month, employees would have been used for making what deliveries he is making now.

For example, if a food trays could not be delivered to new patients until dietary workers had free time. In addition, the central supply office has only two people working at night. If both are out making deliveries, their telephone goes unanswered. Now with the robot, a supply worker can remain at the telephone while the other worker and the robot make rounds.

While delivering food trays and snacks are its daytime task, supplies such as sterile surgical packages, laundry, tubing, bandages, syringes and non-narcotic drugs from the pharmacy are loaded at night.

"The robot adds a new dimension to service," Hatfield said, adding that employees don't feel threatened by a bucket of computer chips handling their tasks.

"They love it," he said, because it saves workers from making the deliveries themselves and allows them to perform their assigned tasks.

If the robot project works out to BMC's liking, the facility will continue to lease it at $5.25 an hour, Hatfield said.

At present, BMC is one of more than a dozen hospitals in the United States using robots. Gaye Engleberger, director of marketing for Transitions Research Corp. of Danbury, Conn., said her firm has 15 robots at U.S. hospitals now, as well as some in Japan.

While TRC is the only manufacturer of hospitalwide delivery robots now, "We would welcome more competition," Engleberger said.

The robot has a list price of $70,000 for those who prefer outright purchase to leasing, such as the case with Stanford University in California. The university's hospital purchased three of the HelpMate robots.

The robot was tested in 1989, Engleberger said, and has gained favorable publicity in professional journals. While TRC still is "in the early stages of the learning curve," Engleberger noted that "Burlington (Medical Center) is on the leading edge. They are definitely innovators."

Engleberger noted that the HelpMate robot also could be used in nursing homes as well as commercial and manufacturing applications that require humans to run errands. TRC also markets a commercial floor-care robot and is developing ScrubMate for the U.S. Postal Service. ScrubMate is designed to clean restrooms with a long arm that scours floors, sinks, walls and toilets.

"I want one of those for my home," Engleberger chuckled.

Meanwhile, Hatfield said BMC's robot will be named soon. The hospital is conducting a name-the-robot contest among employees, physicians and volunteers with the deadline for entries last Friday. The winner receives a clock-radio for dubbing the robot.