ENTREPRENEUR

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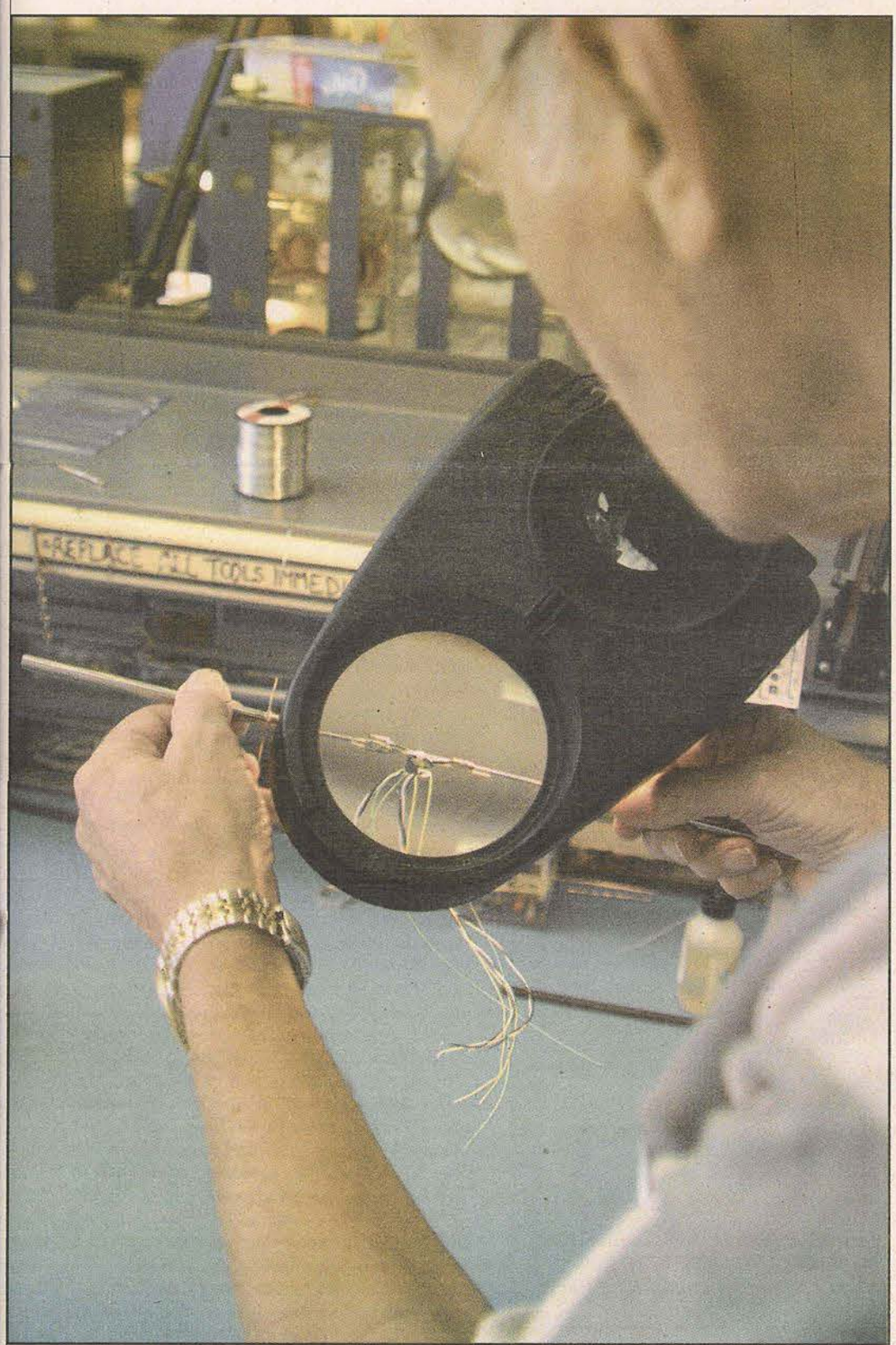
INSIDE

OUT IN SPACE



JANET ADAMS ■ BUSINESS FIRST

Joseph Harpster, CEO of Intek Inc., takes a close look at a tiny capillary flow meter that is produced at his company in Westerville. Intek makes equipment used by NASA and in a variety of other industries.

Small Westerville company makes equipment used in space station

BY TIM PUET ■ FOR BUSINESS FIRST

Equipment designed by a Westerville company is helping make sure that astronauts on the space shuttle and the international space station are living in a safe, healthy environment.

Devices built by Intek Inc. monitor the space station's air flow and help control the temperature. Intek also supplies NASA with flow meters that have been part of every space shuttle flight since 1984. In addition, the company produces equipment that helps power plants run more efficiently and is used in other industries.

Its newest aerospace product was shipped to the Boeing Co. earlier this month for use on the space shuttle. It's a group of three flow meters to monitor the flow of high-purity water that replenishes the station from a supply module.

Shipment of the meters completed a process that began three years ago with initial design of the devices, said Marilyn Harpster, Intek executive vice president.

She and her husband, Joseph, formed the company in the basement of their home in 1976. Today, it has 20 employees and had revenue of between $2 million and $2.5 million last year.

Going into space

Intek, working as a subcontractor for the former McDonnell Douglas (now part of Boeing) and Lockheed Martin, has produced liquid ammonia flow meters and temperature sensors used in operation and control of the space station's thermal control system.

Another Intek-built device on the station helps purify air by cat-

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JANET ADAMS ■ BUSINESS FIRST

Power plant meters for turbines sit in the Intek shop. Dean Thompson looks over equipment in the back.

SPACE: *Meters find leaks in power plants*

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alytically oxidizing and removing contaminants.

"It's important to continuously monitor conditions on the space station because it's a controlled environment and emissions aren't just absorbed by the atmosphere as they would be on Earth," Joseph said.

"For example, one human constantly generates about 100 watts of heat. Multiply that by the number of people on the space station, often working at close quarters, and all the equipment that generates heat.

"All this means the possibility always exists that the atmosphere on the station can become too contaminated or overheated, and that makes it necessary to have the devices we provide," he said.

Intek has been part of the space program since its founding. Joseph's involvement with NASA goes back to the early 1970s, when he worked at Ohio Semitronics Inc. of Columbus.

Intek's meters measure the flow of ammonia on the space station and of other refrigerants and water on the space shuttle. The company's flow meters have been used more than 100 times on shuttles since their first installation on the ninth shuttle mission 21 years ago.

"The meters we made as original equipment in 1984 are still being used today and never were sent back for repairs," Joseph said. "Even when the refrigerant on the shuttle was switched from freon to other gases, they never sent the meters back to us for recalibration, so we figure NASA made any changes on its own. They were designed to last 20 years and 20-plus have gone by, so the meters have more than lived up to their promise."

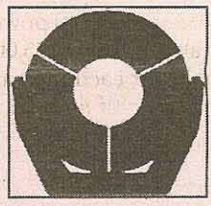
On the first anniversary of the space station, Intek and a large Russian firm were the only two subcontractors recognized by Boeing with the Space Station Exceptional Company Performance Award for showing high-level product quality, excelling in technical and cost performance.

"Receiving the award was a great thrill for us because here we are little bitty Intek with 20 people, probably the smallest first-tier subcontractor on the space station program, getting the same honor as one of the biggest industries in Russia," he said.

OUT IN SPACE

INTEK INC.

Type of business: Manufactures flow measurement and diagnostic instruments for industries and the space program.
Location: 751 Intek Way, Westerville
Co-founders: Joseph and Marilyn Harpster
CEO: Joseph Harpster
Executive vice president: Marilyn Harpster
2004 revenue: $2.5 million
Founded: 1976
Web site: www.rheotherm.com



"All of us here are willing to spend nights, weekends, whatever it takes to get the job done. We've kept things small because there hasn't been the need to grow bigger and because every person has done his or her part to make the company succeed," Joseph said.

Henry Domingo, with Boeing, agreed and said Intek has a solid reputation.

"Intek is looked on highly by everyone involved in the shuttle program because of the excellent support they provide," said Domingo, project engineer for space station payload and cargo integration. "They're a small company, but they provide one of the most critical pieces of hardware on the space station."

Beyond space

Satisfaction with Intek's work has made the company part of Boeing's preferred supplier network.

"This means that because you've demonstrated the quality of your work in the past, you're able to jump through fewer hoops to obtain contracts, provided you continue to adhere to standards," Marilyn Harpster said. "It also means Boeing can select you for a job even if you're not the lowest bidder, as long as your bid is within a certain percentage of the low one."

In addition to its meters and sensors, Intek has designed and manufactured a thermal control system used in crystal growth experiments on several shuttle missions.

"Aerospace is the smallest component of

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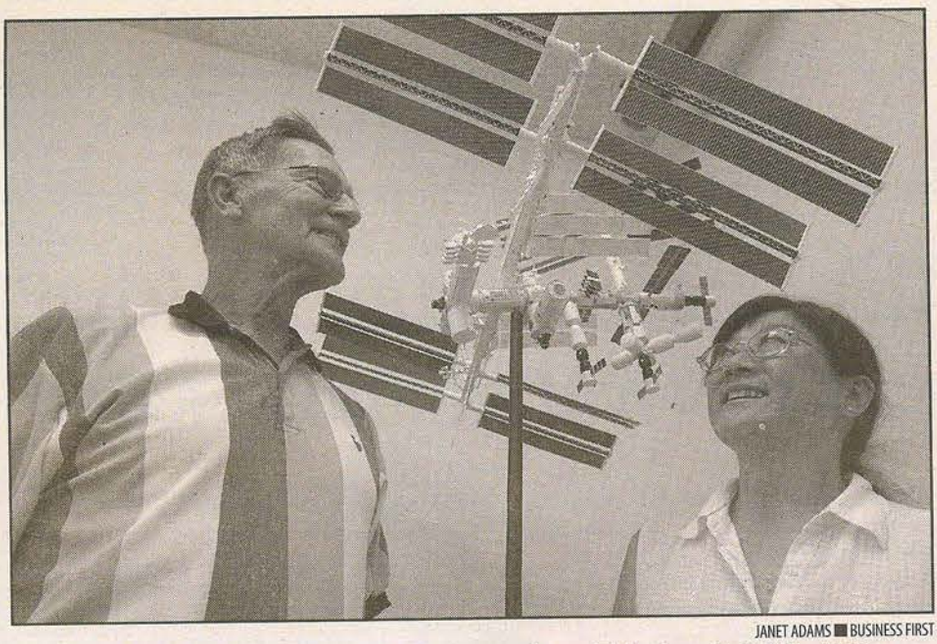

JANET ADAMS ■ BUSINESS FIRST

Joseph Harpster and Marilyn Harpster look at the space station model that hangs in their firm's lobby.

METER: *Couple supports science majors*

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our company, but it's the most technically exacting, and that's helped the rest of our products because those standards get passed down into everything else we do," Marilyn said.

Intek's RheoVac multiple sensor units monitor condensers at power plants to determine the magnitude of air leaks.

"When a condenser is working well, it gives a power plant a better heat rate, less exhaust, and therefore less pollution and less maintenance," Joseph said. "Air leaks are usually small, but they can be costly. A typical 400-megawatt power generator wastes $125,000 annually for each increase of one-tenth of an inch in back pressure caused by a leak."

Since its introduction in 1994, the RheoVac units have been used by many power plants to identify leaks and save money.

Bob Lattomus, an engineer with a Conectiv Energy plant in Edgemoor, Del., said the RheoVac system saved the plant $500,000 a year by finding a leak.

"By repairing the opening, we not only eliminated the leakage, but we were also able to operate the unit using one vacuum pump," he said.

Eastman Chemical Co. applied the RheoVac system to help determine water vapor flow rate in a chemical drying operation at a plant in Batesville, Ark. The company said information from the system enabled it to save $2 million and reduce the number of dryers needed to meet production targets.

"Because we've worked with condensers for more than 10 years, we've become very knowledgeable about how they work, how our equipment is used on them and what it tells about the health of a condenser system," Joseph said. "Now we're passing that information along to power companies by conducting workshops on condenser operation."

"Joe's work and his presentation of several technical papers about condensers has clearly expanded the base of available knowledge about the product," said Dennis Schumerth of Valtimet Inc. of Tustin, Calif., of the heat exchanger committee of the American Society of Mechanical Engineers.

Intek's flow meters measure the flow of a variety of liquids and gases. The Harpsters said one advantage of their meters is that they have no moving parts and no seals that can deteriorate, making them more readily adaptable for harsh plant environments and space flight.

They're used by hundreds of companies for multiple applications. Marilyn said one of those applications which may be most recognizable to consumers is Procter and Gamble Co.'s use of meters to monitor the flow of blue dye into its Downy fabric softener. They even have a use in cloud seeding.

> "The meters we made as original equipment (for the space shuttle) in 1984 are still being used today and never were sent back for repairs."
>
> **Joseph Harpster**
> Intek Inc.

On the ground

The company has been at its 12,800-square-foor location since 1989 and there are no plans for expansion.

"It's hard to say what we'll be doing in the next five or 10 years," Marilyn said. "We'd like to continue to excel in what we do and to contribute to society by integrating technologies to create new solutions.

They began the business from scratch, with their technical knowledge as their only capital, and lived on Marilyn's salary from Owens Corning Fiberglass for several years until Intek established its financial footing.

"Eventually, we started hiring employees, but still didn't take salaries of our own until we got the business going to the point we felt able to pay ourselves," she said. "I remember what a great thrill it was to buy my first pair of shoes after five years."

The couple have four grown children and two of them are involved in the company. Their concern about the future of science in the United States has led the Harpsters to provide scholarships totaling $2,500 to science fair winners at St. Paul School in Westerville.

They also have created a scholarship fund for University of Dayton juniors and seniors interested in science careers.

"There's so few people studying science and engineering in the United States that it's a crying shame," Marilyn said. "Last year, we had 60,000 engineering graduates while China and Japan had 300,000 each. We'll never be able to compete with them if this continues."