

# MTF

## JCI RELEASES NEW FMS PRODUCT

### Lobo Moves Over for Metasys

You've known it as Lobo. With its promise of being a next generation facility management system that will keep our competition at bay, Lobo has been the source of some excruciating anticipation.

But now with its formal release this month under a brand new name—Metasys—it's the source of some very high praise and very high hopes. One sales engineer from the Los Angeles branch said simply after seeing the new product line, "Call your broker—and buy JCI!"

**J**ohnson Controls' entire U.S. and Canadian sales force got its first look at Metasys during five two-day divisional rollouts held successively January 8 - 22 in San Francisco, Dallas, Chicago, Newark, and Toronto. A core of presenters from



*Terry Weaver unveils the state-of-the-art packaging scheme of Metasys.*

ESU and EMSU Marketing were on hand at the rollouts to orient sales employees to the new product line.

ESU Vice President and General Manager Terry Weaver told audience members, "I can tell by your calls,

cards, and letters that you've been waiting to see this. I can assure you—we've been dying to show it to you. This is a turning point in your career with Johnson Controls. But for a while, you'll be the customers, and we'll be the salespeople."

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According to Terry, Metasys represents an FMS that is "truly new and different, and recognized that way in the marketplace." It's a product line that capitalizes on the most advanced technologies available, and makes up a system unprecedented in its capabilities, simplicity, flexibility, and cost-effectiveness. All of this, then, is contained in a gleaming enclosure with a high-tech look. Says Terry, "We went for and got a product with a killer bundle of features, attributes, and design characteristics that will give us a commanding advantage over the competition."



The Pacific Coast sales force got a chance to look over the new Metasys product family at San Francisco's rollout.

▲ Top photo: A demonstration of graphic programming language at an operator workstation.

◀ Middle photo: EMSU's product display.

▼ Bottom photo: During the program attendees were tested on their knowledge of the new product with the "Metasys Challenge"—a JCI version of Wheel of Fortune and Jeopardy. Erica Wolfe—Jim Wilson's "right hand man"—played Vanna White.



Pacific Coast sales employees that attended the first rollout in San Francisco were sold. "It's too good to be true," said Anchorage Service Sales Engineer David Kaye. "It's simpler to install and service, easier for customers to use, and cost competitive. It will improve customer relationships because we'll be fighting far fewer problems!"

Portland Service Sales Engineer Arlys Kroon agreed. "This product demonstrates that we've been listening to our customers and have acted on their needs. Offering a product that's sensitive to their concerns will positively affect every department in the branch."

The simplicity of Metasys is what Seattle Branch Manager Pat Nassif latched onto. "The customer won't be scared of this product, because it's so easy for them to learn and use. This alone should provide us with a sustainable advantage in the marketplace."

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But the appearance of Metasys got a lot of attention as well. Said Phoenix Marketing and Sales Manager Keith French, "I like the way it looks best—it's slick! I've got salespeople who are used to selling hardware and wires. They're drooling to sell this product!"

L.A. New Construction Sales Engineer Annie Robertson confirms. "Now we can tell customers we have the most

state-of-the-art, cost-effective system and really start to influence specs like we used to. When I get back to the branch, I'm going to make appointments with every single mechanical engineer I know of, and bring along a bucket load of literature!"

Metasys will be officially released to the public at the ASHRAE Trade Show on February 12 in Atlanta. ■

## **meta-** \metə\ prefix

1: a more highly organized or specialized form of

2: change; transformation

3: more comprehensive; transcending

## **system** \ˈsɪs-təm\ noun

1: a regularly interacting or interdependent group of items forming a unified whole.

Metasys. It's described as the most advanced, straight-forward, and easy to use facility management system that exists today. It earns this distinction by applying the latest, most sophisticated technologies, to the widest array of customer needs.

Says Terry Weaver, "In concept and physical nature, Metasys is completely different from anything we or anyone else has offered before. In developing the system, we didn't just follow someone else's lead and figure out where to smooth over their potholes. Instead, we assaulted several technologies brand new to our industry." Metasys brings us all new hardware, software, programming techniques, and interfaces. And here's what Metasys brings our customers:

### *It's a comprehensive system*

- Metasys is a complete system for managing all aspects of a commercial building. It performs environmental control, energy management, lighting control, fire management and security functions, and overall facility monitoring.
- More important, Metasys blends all these functions into a single network. All functions are connected, "speak the same language," can share information, and can respond appropriately according to each other's actions.
- At the same time, each component performs its job independently, so modifications to one part of the system need not effect other parts of the system.

### *It's simple to install and service*

- Metasys is made up of modular electronic, electrical, and

pneumatic components that simply plug into a baseframe. Installations or additions can be accomplished quickly and easily, without the use of tools.

### *It's easy to use*

- Because Metasys was developed to be user-friendly, the operator needs only minimal training on the system.
- Metasys can be programmed to organize and deliver information according to how the user wants to receive it—not how the system decides to provide it. Users can concentrate on managing the facility, rather than on understanding the system.
- Operator Workstations and Network Terminals provide quick and easy access to all network information. Portable hand-held devices can be plugged into any unit to make command selections or data entry.
- Dynamic Data Access allows all information in the Metasys network to be accessible between all devices.
- The Graphic User Interface allows users to look at the entire building, or just one spot in the building, with just a click of the mouse.
- Graphic Programming Language allows control sequences to be defined simply

by connecting boxes in a flow diagram, using a mouse. Proposed changes can be tested through graphic simulation.

- Metasys automatically maintains 24-hour histories for every input valve. If a problem arises, information is immediately available so customers can see what happened before, during, and after the event. This makes it easy for customers to solve problems and prevent them from occurring.

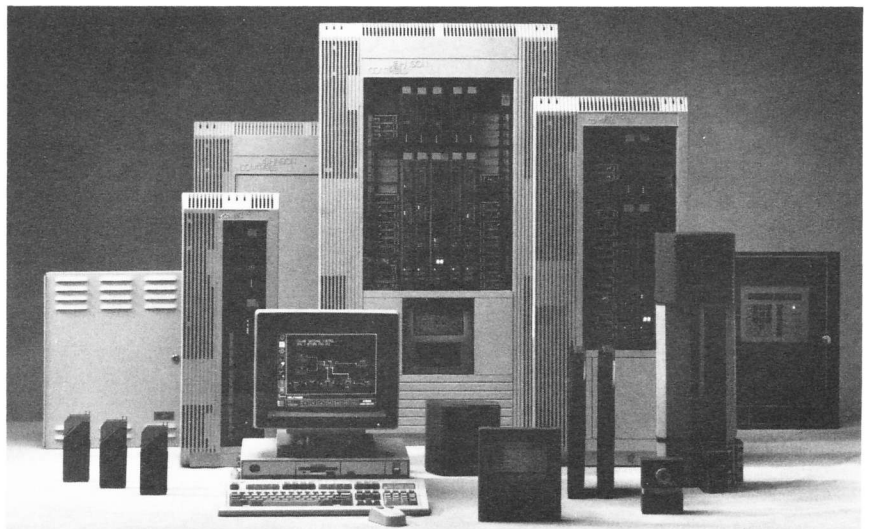
### *It can be tailored to individual needs*

- By using different modules for each building function, Metasys can be custom-tailored to specific applications, to precisely accommodate customers' needs and budgets. Future modifications can also be accomplished easily, as these needs change.

### *It looks as good as it works*

- All the complex functions of Metasys are confined within a streamlined, high-tech enclosure—the most sophisticated hardware packaging design in the FMS industry. This packaging visually expresses the state-of-the-art capabilities of Metasys. With its clean look, it says it again for the customer: Metasys is "so advanced...it's simple."■

*The Metasys product line*



## A Recipe For Success How Metasys Is Made

With mounting competitive pressure, rising labor costs, and accelerating changes in technology, we got hungry for something new. So we started from scratch to create Metasys—a product so unique and advanced in concept and appearance that customers couldn't resist.

The base ingredient of our new product is a single question: what do our customers want and expect of a next generation product? But developing a new product idea isn't a matter of adding a pinch of this and a dash of that to make something that only sounds good. Winning over a skeptical and demanding marketplace takes painstaking technical and market research, precise multi-disciplined design, meticulous testing and retesting, thorough training, and effective marketing.

In this case, too many cooks do not spoil the soup. Every part of SSD had a hand in answering critical questions about our customers' needs, and this work boiled down to our house recipe for new product success.

### **Step One: Prepare Concept**

- Slice one ripe question into several sections.
- Toss question slices with at least 100 customer comments and ideas.
- Sift above mixture through special project team.
- Allow thoughts to gel, forming product concept: "a facility management system that is easy to understand, install, use, and service."

### **Step Two: Mold Concept into Product**

- Add more than 100 years of experience in controls business, at least 50 branch and regional perspectives, a dozen consultants, 60 vendors, the latest available technological advancements, and a half dozen approval agencies.  
(Be aware that the agency requirements may not be compatible with other parts of the mixture.)
- Form into software programs, electronic components, sensors, actuators, communication networks, and manufacturing systems.

- Top off with sophisticated modular hardware packaging.
- Separately, combine technology with simplicity, and flexible applications and pricing for small, medium, and large customers.
- Mix everything well until it crystallizes into the easiest FMS product line in the marketplace to learn, install, use, and service.

### **Step Three: Filter Through Customer Groups**

- Before mold is firm, drain features and procedures through reactions from 100 customers from the U.S., Canada, England, France, Germany, Hong Kong, and Japan.
- Remove customer dislikes, remold customerlikes.
- Drain through customer groups again.
- Remove dislikes, remold likes.
- Continue to drain through customers until no excess dislikes remain.
- \* Put customer reactions aside. These can be shared and used later to spice up sales strategies and service offerings.

### **Step Four: Prepare Seasoning**

- Add 30 weeks of technical training, 600 to 800 application engineers and systems representatives, three weeks sales training, 800 salespeople, thousands of pages of product documentation, application and estimating materials, and 20,000 copies each of technical and marketing brochures.
- Mix product, employees, training, and support materials thoroughly. Allow to solidify.
- \* Add training as needed, via video teleconference, classroom, or computer-based media.

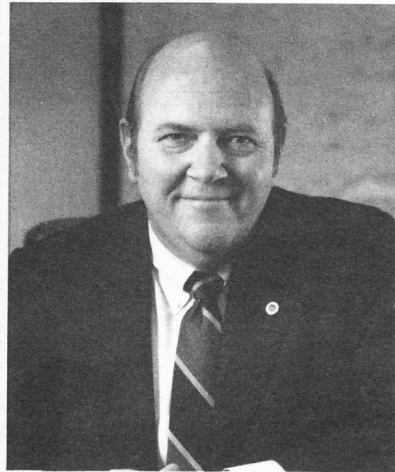
### **Step Five: Heat**

- Combine advertisements, promotional materials, videos, demonstrations, press conferences, satellite broadcasts, and trade shows until sizzles.

### **Step Five: Serve**

- Now you're ready to bring Metasys to your customers. But watch out—it's hot! ■





## ***Making the Most of Our Opportunities***

*By Jim Wilson, Vice President and General Manager, Field Operations Unit*

**N**ever before have we been better poised to spiral our way to the top of this industry.

During the last few years, we've discovered new ways of doing business to help us maximize our strengths, overcome obstacles, and achieve results. And now we can combine those discoveries with the quantum leap in product quality that Metasys brings us.

What a terrific feeling to be able to charge full-force into a new decade, fueled on great expectations. But while we charge ahead, it's important that we move in the right direction and continue to improve. Metasys gives us some powerful advantages to help us move beyond our competition. But it would be a mistake to turn away from the lessons we've learned in the past few years.

Last year's growth is an end result of one of those lessons. In 1989, we challenged ourselves to increase our market share even without a new product...and won. This growth reflects our abilities to listen to customer needs and sell solutions. We've learned that we can close sales by unearthing, working out, and delivering ways to improve our customers' businesses. Because Metasys technology offers a simple, flexible system to our customers, it enhances our ability to sell solutions. But that doesn't mean that our role as problem solvers is over. We must continue to strive to better

understand our customers' businesses, and to explore new ways to help them succeed.

In the face of an industry cost-cutting trend, we learned another lesson. We found that to remain competitive and increase profits, we needed to carefully analyze and act on ways to reduce our costs. Metasys is easy to install and service, and can help us cut costs. But we must complement the cost-effectiveness of our new product with continued efforts toward work process improvements.

The introduction of a new product gives us a unique opportunity to look at how we've done our business in the past, and where we can eliminate waste and perform better in the future. It allows us to be creative and invent new ways to take advantage of our resources to improve the quality of our work today. Metasys gives us an additional push, but it's up to us to keep up the momentum.

Another lesson lies in our very quest to strengthen our leadership position: that the only one who can make us a leader is you. National leadership in the controls marketplace can result only from combined leadership positions in every single one of our branch territories.

The support is there for you. Branch market leadership has been reinforced by the implementation of recent training programs such as Vision, Marketing and Sales Management, Service Operations, and Metro Area Management. The quest can only be achieved by taking advantage of what we've learned, and are continuing to learn. We achieve performance leadership through providing quality solutions, cost leadership through work process improvements, and technological leadership through Metasys. We're on our way. ■

## Design Evolution Continues With Computer Aided Engineering

**"The CAE System is undoubtedly the best engineering tool we've ever had."**

**—Malcolm Gurley,  
Toronto Engineering Manager**

Computer Aided Engineering (CAE) will soon be accessible to JCI branches, after making its debut with the new Metasys product this month. The first release of CAE is programmed with standard Metasys engineering rules to help branch engineers design new product systems.

With CAE, engineers can design entire Metasys HVAC control systems, simply by answering a series of computer-generated questions. First, engineers


quality control system designs—even as Metasys is just unveiled to branch employees and customers. "The CAE system is very user-friendly," shares Rich. "I was impressed that with minimal training I could easily design Metasys control systems—something I knew little about."

The hallmark of CAE, however, is its capacity to save time, according to Toronto Engineering Manager Malcolm Gurley. "CAE produces HVAC flow



*Members of Branch Engineering Automation's CAE development team John Ignasiak (seated), Greg Jennings, and Mary Boelk go through a test design session. Team members not pictured: Bill Huth and Kiki Cappas.*

MTF is published monthly for employees and retirees of the Field Operations Unit, SSD. Employees like: Philadelphia Service Mechanic Dave Tolchin

He'd go to the moon for his customers! One from General Electric Astro Space writes "Dave is a guy you build a successful business around. Summer's sweltering heat with no air conditioning would have turned our spacecraft into millions of dollars of junk. But through Dave's efforts, we've kept the NASA space shuttle program on schedule for launch." 

Readers may submit story ideas, news items, and comments to Fran Verito, Publications Editor, MTF, P.O. Box 423, 507 East Michigan Street, Milwaukee, WI 53201.

enter information about the control systems' requirements; next, according to this input the computer automatically produces control drawings and software. Designs can also be copied or altered using the Computer Aided Design and Drafting system (CADD)—eliminating many manual tasks.

Project managers and engineering managers from the Houston, Toronto, Indianapolis, Kansas City, and Hartford branches participated in a CAE design review board to help Milwaukee's Branch Engineering Automation develop and test the system. Indianapolis Engineering Manager Rich Burcham says CAE should enhance engineers' confidence in producing

diagrams, sequences of operations, panel drawings, bills of material—practically everything required for the engineering of control systems. That's a lot of time and effort saved," he says.

Malcolm also predicts that CAE will substantially reduce overall job costs, by improving productivity in engineering designs. And because CAE standardizes the design process, internal and external customers should benefit from enhanced design accuracy, consistency, and quality.

Although CAE currently applies only to Metasys products, Branch Engineering Automation is working on expanding applications to other JCI products. ■

December 1989

## Call Tracking Update

from Gene Strehlow, Manager  
Technical Support Group

The Technical Support Group (TSG) Call Tracking System has been up and running for a little over nine months (see March, 1989 MTF Technical News Page). We appreciate your cooperation as we continually refine it to become more responsive to branch needs. At this juncture I just wanted to take a minute to let you know about some of the benefits it has produced.

Documenting the number and types of calls has lead TSG and other groups to request literature revisions, to produce Cross Reference Lists and Reference Bulletins to make the branches more self-sufficient, and to send out Flash Sheets to alert all branches to potential problems with certain devices or systems. Repetitive calls have lead to changes in manufacturing and other processes to improve the quality of the products you sell (see the November, 1989 MTF Technical News Page "A-4110 Quality Improved"). The information gathered through the Call Tracking System allowed us to publish suggestions that may make your life easier (see the September, 1989 MTF Technical News Page "Are you a FAN fan?"). Some of the ideas generated by calls have been passed on to marketing because they have pointed out "blank spots" in our existing product lines.

All in all, we are proud to say that, with your patience and help, the Call Tracking database is being used to address the genuine needs of our branch customers. Having the following ready for our clerical personnel (TAC Coordinators) will speed your way through the system.

- Name
- Branch
- Job Name
- Product/Service in Question
- Brief Summary of the Question

With your continued input, we will be able to not only make the actual day-to-day usage of Call Tracking more efficient, but we, together, can make positive changes in the way we do business.

## Domestic Valve Standardization

by Jim Greevers

A lot of confusion exists about when various valve changes were made and the effects of these changes on electric actuators and linkages. The basic dates are relatively few but the details of how changes affected valves and linkages can be confusing.

### PRIOR TO 1969

The basic valve bodies were always the same, but the trim, stem and couplings varied quite a bit. Before March 1, 1969, all of the valve lines were different. The pneumatic valves using V-3000 tops and 1/4-28 stems were considered the "standard" valve, the VB series Cybertronic valves had a 5/16-22 threads per inch stem which was longer than the pneumatic model. The Penn V90 valves had a higher lift and a longer stem than the pneumatic version.

### 1969 - 1977

After March 1, 1969, the pneumatic valves with V-3000 tops and all of the 1/2" to 2" VB series valves became identical. The VB stem changed to 1/4-28 threads per inch and the stem height became the same. The V90 series remained different, because the gear train actuators could not utilize the low lift of the standard valve. The

special packing box and longer stem supplied for high lift applications kept all V90's unique. The 2-1/2" and larger valves were still unique with the VB's using a 5/16" stem and the V90's using the 3/8" version.

### 1977 - 1985

The next major change occurred in August, 1977 when the present cage guided line of valves was introduced in the 1/2" through 1" sizes. At this time, all V-3000 pneumatic operated valves, all VB series valves and the V90A and V90D series valves became identical in the 1/2" to 2" sizes. The stem heights were fixed at 2-25/64" from the top of the stem to the mounting flat on the centerpiece with the stem in the full up position. All of these valves used 1/4-28 threaded stems.

All 2-1/2" and larger valve sizes remained unique to the actuator line that they matched, with V90's using 3/8" stems and VB series valves using 5/16" stems. The larger pneumatic actuators used several different stem sizes on the same valves.

### 1986 - PRESENT

In December 1985, the production of 2-1/2, 3 and 4" valves for the VB, V90A and V90D series was standardized. These flanged, cast iron valves were all converted to a 3/8" stem diameter with a 3/8-20 threads per inch. The pneumatic valves remained different because of the multiple sizes of pneumatic actuator available.

The most recent change in the valve lines involved changing the 1-1/2" and 2" sizes to the cage guided design in 1987. This change made no difference in the actuators or linkages being used.

The recommended actuator/linkage combinations available for each of the VB series valves are shown in the latest bulletins. The nominal shutoff pressure ratings are also listed in the bulletins and should not be exceeded.

Company Confidential

## Basic Rules for Actuator Conversion

by Jim Greevers

Rule #1: Any pneumatic valve using a V-3000 style actuator may be converted to electric actuation simply by removing the spring plates and spring for conversion to an M100 actuator. On V-3000 actuated valves up to 1-1/2", the VA-805X may be used, but the lower spring plate must be retained. The stem heights are all the same and have used 1/4-28 stems for many years.

Rule #2: If an M100 is being used to replace a VA-3200, VA-5000 or VA-6001 actuator, the stem must be checked for diameter. The parts supplied in the Y20EBD linkage kits are suitable for coupling to 1/4 and 3/8" stem diameters. If the valve stem is 5/16-22 or an older actuator with alphabetic suffixes is present, a stem adapter kit, Y20EBE-1 is required to fit the 5/16-22 stem.

Rule #3: There are no parts for the repair of the old actuators or linkages. All of these parts have been used up or scrapped out. This includes M80's, Y20A's, M81's, M41's and M40's. All hydraulic and thermal actuators have likewise been obsoleted, and there are no remaining parts available. This includes the VA-2000, VA-3000, VA-3200, VA-3300, VA-3400, VA-5000 and VA-6001 series.

Rule #4: Conversion of 3R,4R or 5R pneumatic actuated valves to electric or electronic actuators must be analyzed on an individual basis. All valves with 8R actuators use a 1/2" diameter stem which is impossible to link to M100 series electric actuators. Any valve with a 1/2" diameter stem must use the N-9510 Electro-Pneumatic Positioner to allow use with electronic control signals.

Rule #5: All VA-3400 actuators were used on valves with 1/2" stems. These

valves can be converted to pneumatic actuators for use with the N-9510. Two alternatives are available.

The simplest conversion is to use a Fisher #657 Size 46 top. The top number is FS 657-18 and spring #1E921527092 must be used. This will develop the same force as the old actuator. The original yoke adapter and stem coupler must be reused.

A more complex conversion would require the substitution of new parts into the old valve to allow the use of Johnson 8R actuator with the N-9510. This generally requires a complete rebuilding of the valve and replacement of most of the internal parts including the stem.

## Troubleshooting Troubles with the JC85/20?

by John Tomlin

Is your branch one of those servicing JC85/20s? Are you running into hardware problems that take hours, maybe days, to solve? Have we got a deal for you! There are available, **FREE OF CHARGE**, buss monitor boards (BMB) which are very helpful in troubleshooting the 85/20 CPU hardware problems. If you want one, all you have to do is call 1-800-333-2222 (ext. HELP) and ask. There is a limited supply of these buss boards so run to your phone and dial...1-800-333-2222. Do it now!

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## Idea of the Month

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Anthony Guardiani (Hartford Branch), our December Idea of the Month award recipient, sent in a simple, but excellent idea for all System Representatives, Service Application Engineers or anyone who will be frequenting a job site. Anthony suggests routinely carrying an extra telephone hand set in the service van or other vehicle, so that it is available

to take into the customer's building. This can save playing "phone search" for a public phone or waiting games with the customer before being allowed to use the private one. "On jobs which have a dial-in modem," says Anthony, "it's really convenient to plug in and use the phone line for communications." The phone can be used for calls out to or in from the branch office, when guidance or instruction is needed, or for briefing fellow workers at other stations within the building. This is most useful when two way communication is necessary between the mechanical room and the control panel to troubleshoot a problem. For best results, Anthony suggests that the phone be pulse/tone switchable and have a loud bell.

For his idea Anthony will receive a \$50.00 award for having the idea of the month. Many of you have sent in ideas this year, and we thank you for your support and effort. Ideas submitted should be a unique configuration of existing hardware/software, a new application of widely accepted equipment, a candidate for the Branch Purchasing Directory, a productivity enhancer or a hazard reducer for branch or other personnel. We look forward to your GOOD ideas in the new year.

## Technical News Page

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TNP Coordinator: Sally Cissna

File in your branch  
Technical Tips

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