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SCAN-TECH 9

Looking out over the exhibit hall....

....at SCAN-TECH 90 in Atlanta (from a second floor picture window that afforded a panoramic view), one observer was heard to remark: "This is now a _real_ international trade show!"

And so it was. There were over 12,000 people attending -- including about 4,500 exhibitor personnel -- up about 20% over the past two years. In addition to Americans and Canadians, there was a wide representation of Europeans (West and East), South Americans, Australians, Africans and Asians. There was much to see and a great deal to learn at exhibit booths, seminars, special meetings and impromptu encounters in the aisles and corridors.

As for the application of automatic identification, there were no innovations readily apparent that we would characterize as "technological breakthroughs." We did, however, see many product improvements and enhancements in printers, scanners and software which may open up new market opportunities. We also noted that systems integrators and application software designers are coming into their own and represent an important avenue for potential user contacts.

[Upon close inspection, it becomes evident that the industry may need to be a bit more precise when referring to those firms which characterize themselves as specialists in these two areas. Of the 95 companies that were listed on the SCAN-TECH program under "Applications Software" and the 50 companies cited as "Systems Integrators," the overwhelming majority were hardware suppliers. These manufacturers and distributors of scanners, printers and computer hardware do not normally represent the type of independent consulting and single-source procurement services that many users are seeking.]

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*                       LATE BREAKING NEW ITEM                               *
*                                                                            *
*    Eugene, Oregon, October 11....Spectra-Physics announced today that it   *
*    has filed suit against Symbol Technologies to clarify its rights to make *
*    laser guns under Symbol's patents, and to stop what it alleges are      *
*    Symbol's unfair competition and customer intimidation.                  *
*    Complete details on pages 3 and 8.                                      *
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INCLUDING THE INTERNATIONAL EDITION

The exhibitors were unanimous in their praise for the facilities at the Georgia World Congress Center, which they found clean, efficient and accessible. There were some who questioned the effectiveness of a trade show which moves around each year from city to city, and they suggested that SCAN-TECH might be better sited in one central location. (Chicago usually comes up as the preferred venue.) More than one company representative expressed some trepidation about Dallas next year, in spite of the sentiment for celebrating the tenth SCAN-TECH in the city where it all began.

Now, on to some of the specific news we found at SCAN-TECH on October 1-4, 1990 -- developments which will bear watching over the next 12 months. (To save valuable space, we have indicated only phone numbers -- not full addresses -- following each company name in the articles that follow.)

Bar code scanners featured this year....

....have become more aggressive, more forgiving, more versatile, faster, smaller and cheaper than ever before.

- Autodiscrimination is a given, with almost all units able to decode UPC/EAN, 39, I 2/5, Codabar, and 128 with no user intervention.

- Scan-stitching is becoming more available, enabling scanners to read shorter symbols -- even those that are poorly printed -- by piecing together only parts of successful scans.

- Product packages are smaller, even incorporating complete decode electronics in wands, for example, eliminating the need for wedges.

- Top-of-the-counter scanners weigh under 2 lbs., have added more lines to their scan patterns while taking up less and less space with smaller and smaller footprints.

- Scanning efficiency is sometimes astonishing, with laser guns now able to read a bar code across the room or through a dirty windshield, and CCDs getting faster and moving up off the label surface.

- Overall power consumption is down, reliability is up, prices are competitive.

<u>Metrologic</u> (609/228-8100) has a new visible laser diode, countertop, projection scanner weighing in at 27 oz. with a 2.5" x 2.5" footprint, 2,000 scans per second and 6 watts of power consumption.

<u>Opticon</u> (914/365-0090) demonstrated a CCD scanner with 400 scans per second. The company predicts that it will soon achieve a depth of field of 1.5" at a focal length of 4" or more -- an enormous improvement for CCDs which normally require contact for effective scanning.

<u>Welch-Allyn</u> (315/685-8945) has a new, compact, fixed mount, laser diode scanner for industrial applications where mounting space is limited. The company has also added fully integrated wands to its product line.

But it was probably <u>Spectra-Physics</u> that caused the greatest stir with the introduction of their new line of hand-held scanners. This flurry was not just caused by the products themselves -- a laser gun, CCD and wand -- but was a result of their corporate moves, quietly executed by management. Spectra had completed what seemed, in effect, to be a neat end-run around Symbol Technologies' patents and product designs for hand-held laser scanners.

[Spectra-Physics was the first -- and for a long time, the only -- company licensed by Symbol to manufacture hand-held laser scanners under two of Symbol's basic patents. The license runs for the life of those patents and any subsequent extensions. For the past five years, Spectra did not have any laser guns in its product line and actually sold its Symbol license to Computer Identics in 1986. Spectra turned around and bought it back from C/I last year, at which time the company said it had no immediate plans to enter the laser gun market (*SCAN* March 89).

Meanwhile, Symbol had successfully sued Opticon for patent violations and it is currently in various stages of similar litigation with Metrologic, Photographic Sciences and NCR (*SCAN May 90; June 90; July 90*).]

In the move that drew the special notice at SCAN-TECH, Spectra, with the patent license from Symbol in its hip pocket, turned around and acquired a manufacturing license from Opticon for their "hand-held laser barcode reader technology." In other words, Spectra, believing it was protected from Symbol under its patent license, felt it could do a better deal (and presumably have a better product) by manufacturing a unit designed by Opticon -- <u>the very same laser gun that was proven in court to be in violation of Symbol's patents</u>.

The new Spectra laser gun will be available by mid-November, 1990 and one-off list prices are anticipated to be $1,095 (without internal decoding) and $1,345 (with decoding). As an added sweetener to the Opticon deal, Spectra will resell CCD and wand scanners that it will purchase from Opticon.

Spectra-Physics -- now owned by Pharos, a division of Sweden-based Nobel Industries -- expects sales in 1990 of $100 million. The company has formed the Portable Business Products Group, headed by Tom Durant, to market these new hand-held scanner products. According to Durant, there are three major factors that will make his group successful:

1. The company can now offer a full range of portable and stationary scanning products. 2. They have the scanning expertise, going back to 1974 when they first introduced one of the earliest supermarket slot scanners. 3. They are a non-threatening source of supply to their distributors. [Durant makes the point that his group will only market through distributors and, unlike Symbol, will not have a direct sales force competing with them.]

[For new developments on the Spectra/Symbol legal front, see Page 8 below.]

<u>Fully half of the Atlanta exhibitors</u>....

....were offering <u>printing equipment</u> and <u>label supplies</u>. This has become the bread and butter market of the bar coding business, although there isn't much glamour associated with this part of the industry. Almost everyone who

installs a bar coding system needs a continuing supply of some type of labels -- preprinted or produced in-house.

Last year, a whole new breed of direct thermal and thermal transfer printers came on the market sporting new speeds and capabilities based on the high performance 32-bit processors. These demand printers were pouring out 4" wide quality labels at speeds of up to 8" per second.

This year, the new interests were software enhancements, greater flexibility, and an emphasis on price. The price leader, among the high performance thermal units, was Sato (415/964-5445) with a 5" per second printer at under $2,500. Atech (508/624-4546), still claiming to be the fastest in this category -- 200 dots per inch at 8" per second, and priced at about $4,500 -- has added graphics which allows for logos and other images to be optically scanned into a PC and down-loaded into the thermal printers for output on each label.

RJS (818/357-9781) has enlarged its line of thermal printers and seemed to be the only company that still features instant verification of each label (on most of their printers) to insure scannability. Other manufacturers offered thermal-type printers in all sizes, shapes and price ranges.

For those who need large quantities of high quality labels with even greater flexibility, the continuous-feed laser printers are now coming into their own. The firm making a bid to lead the way in this product group is headed by Ivan Jeanblane and Tom Dooley, who left Diagraph and founded Identification Business Inc. (314/537-8400) in December, 1987. An exuberant Dooley optimistically predicted: "We intend to be the leaders in toner-based printing technology -- the cheapest and highest quality method of printing labels."

IBI's units, which are built around standard laser printing mechanisms, enhanced with special IBI software, run 300 x 300 dpi at 16 pages per minute and cost about $7,000. According to Dooley: "Output speed is only limited by the hardware -- we have already written the software to produce 50 pages per minute." Dooley says his company's sales were $1 million in 1989, will be $5 million in 1990, and will, he projects, take off to a whopping $20 million in 1991. Distribution of the IBI products is through VARs only and there are no plans to sell directly to end users.

In a related move, IBI has entered into a technology transfer and distribution agreement with Panda Printer Products (404/252-1366). Panda has licensed IBI to use special software it has developed for continuous laser printers. IBI, in turn, named Panda as the international master distributor of its model 1600C -- which Panda will market under the LaserLynx name.

Continuous-feed laser printers are based on commercially available print engines. Since each company's success in this product area will depend on packaging, software and marketing -- rather than on basic proprietary hardware -- this promises to become a highly competitive niche market.

We ran across two so-called "portable" printers at SCAN-TECH. They are characterized as portable because they are battery-operated, can be readily transported, plunked down anywhere and started up instantly.

First, the Videx (503/758-0521) BarCoder, at $795, which looks like a typewriter, weighs about 3 1/2 lbs (without its four D-cell batteries) and produces 1/2" wide tape/labels.

The other, announced as the "first hand-held bar code printer", is Barxon's (703/876-9055) Model Leo-60, which weighs in at under 2 lbs (not including batteries and label stock), measures 3" x 4" x 9", and will print direct thermal labels up to 2.36" wide at a speed of 1.65" per second. According to a company spokesman, this Barxon unit, which is manufactured at the company's home base in Korea, will be available in two months at "under $1,000."

Stand-alone thermal units, which have been doing an excellent job for the past few years, have filled an important industry need for quality, speed and flexibility. But, by most estimates, the thermal printers have probably reached their maximum operating performance.

There is every indication that as a group, demand printers will get faster, be more cost-effective and yield higher quality. Continuous-feed laser printers and portable units show signs of developing quickly. Undoubtedly, we can expect higher performing printers, employing new technologies, to emerge from the R&D labs in the near future.

Away from the exhibit floor....

....and out of the mainstream of the show traffic, AIM set up a separate area called the **Actual Working System Displays**.

It was an excellent concept that seemed to suffer from poor location and inadequate promotion. As a visitor approached this exhibit, the displays were spread around a poorly marked hall and there was little explanation of what was going on. A small, simple booklet was available which listed the exhibitors, contained a brief description of each demonstration, and suggested that this exposition was the SCAN-TECH approach to Systems Integration.

The exhibits simulated four operating systems as they were actually installed and running in the field. It wasn't until the visitor actually got up close, however, and became involved in the displays, that the demonstrations proved to be very worthwhile. The presentations covered:

1. Automatic Weighing and Labeling of Shipping Cartons at the Wampler-Longacre Company (poultry) in Franconio, PA -- sponsored by AccuSort Systems.

2. Time & Attendance, Labor Reporting and Job Tracking at the Donaldson Company (air filters, mufflers and air cleaners) in Baldwin, WI -- sponsored by Dytec.

3. Full Distribution Bar Coding Systems at Albers, Inc. (health care products for hospitals -- see *SCAN* July 90) in Knoxville, TN -- sponsored by Laserlight Systems.

4. In-store Point-of-Sale & Inventory Management at Hills Department Store (retail) in Pittsburgh, PA -- sponsored by Symbol Technologies.

We came away impressed. This exhibit is what a demonstration of systems integration should be like. We have no idea how many people passed through this area during the 3 days (there was no official count), but a spot check suggested that it was sparsely attended. We believe the concept is sound and should be expanded -- with more sponsors, more examples and better promotion.

For the large industrial companies....

....systems integration presents a somewhat familiar challenge. Most of these organizations have in-house engineering and systems staffs. They are comfortable with readily available outside consultants to design, specify and even build auto ID facilities.

Litton Industries' Integrated Automated Division (415/769-5548), specializing in these types of large installations, had a significant exhibit at SCAN-TECH. According to Tom Legally, National Sales Manager: "When you get down to the smaller and medium-sized companies, the independent consultants are more appropriate. When the hardware companies step in to perform these functions for the smaller users, however, they are inclined to push their own equipment."

[Tom Legally made an interesting point about SCAN-TECH, as it affected his company. "In the early days," he commented, "it was the top executives who came to SCAN-TECH and they were the ones we needed to talk with to get corporate decisions. Now that top management is knowledgeable about auto ID, and understands that they need it, they send the lower level people -- those who have to put the nuts and bolts together."]

One way in which the auto ID hardware companies are exploring ways to expand their systems capabilities is through so-called "strategic alliances" with companies that offer complementary products and services. Thus, Symbol/MSI signed up with Andersen Consulting (Chicago, IL) -- to combine their products and services to implement Quick Response Systems; Symbol also aligned itself with a number of software specialists to enhance its hardware products. Intermec and Bass (Dayton, OH) announced a two-way RF technology exchange. Welch-Allyn acquired Applied Vertical Systems (Vienna, VA) to obtain software application products. Accu-Sort teamed up with Andersen Consulting to present Logistics 2000, showcasing hardware and software vendors.

This trend, toward the integration of companies, products and capabilities in order to provide single-source, full-system capability, is just reaching its stride -- and is evident in both retail and manufacturing/industrial applications. Single-source is a response to the user community, which does not want to negotiate separate contracts for each component of its system. This move, to a sole supplier with total responsibility, also becomes increasingly valid as the auto ID market moves from the large retail chains and manufacturing installations to the smaller and medium-sized companies, which lack in-house staff and expertise to pull together all of the system elements.

Two new additions....

....to the ranks of "special" industry consultants were busy announcing their presence in Atlanta -- although they were not exhibitors. They are the firms of Andersson Czaplicki Ltd. (714/858-7400; 206/337-1109) and the Glass Consulting Group (212/254-7329). What makes them special is that their services are directed toward the auto ID vendors and not the users.

Ed Andersson and Dave ("Zap") Czaplicki (they refer to their company as AZ) combine 30 years of varied experience in the auto ID industry. Both have

served as President of AIM USA and AIM International. Andersson was with Computer Identics and Atech Systems and now publishes the newsletter *Inside Auto ID*. Zap gained his auto ID experience with Skan-A-Matic and Intermec.

According to their printed statement, AZ's objectives are to "assist auto ID firms in meeting their strategic goals by offering services in the areas of strategic planning, marketing, sales and corporate communications."

In addition, Andersson revealed to *SCAN*: "We are also contemplating the start-up of a new conference and exposition aimed directly at systems rather than products. We believe that this can evolve into a twice a year event in the United States and once a year in Europe, with the first show taking place as early as 1991." He specifically pointed out that he does not see any conflict or competition with SCAN-TECH or ID Expo, which are product-oriented.

Glass Consulting was recently founded by E. Gray Glass, who left Prudential-Bache a few months ago, where he had been a financial analyst. Glass had closely analyzed the auto ID industry and was a specialist who followed the public companies; i.e. Symbol/MSI, Intermec, Telxon. He plans to offer a broad spectrum of consulting services to vendor companies.

Although SCAN-TECH shows....

....are dominated by bar code scanning, the other auto ID disciplines were well represented in Atlanta. As with bar coding, however, there was little evidence of any basic technological advances.

In RF communications, spread spectrum has become the most publicized method offering the greatest potential. Spread spectrum is the data communications technology, suitable for in-store or in-plant systems, that does not require on-site FCC licensing, and can exist in the presence of high levels of interfering signals.

Symbol, Intermec and Telxon have all announced products using spread spectrum and systems employing this means of communications are expected to develop rapidly starting next year. [Intermec states that it is the first company in the industry to have their spread spectrum Radio Frequency Data Collection System hardware approved by the FCC.]

> In Atlanta, a K mart spokesman quietly revealed that his company will test Symbol's so-called "wireless store" spread spectrum system in a few stores over the next few months. If all goes well, K mart will roll out to 600 stores in 1991 and 2,500 stores in 1992. If that plan continues on course, it represents a blow to Telxon, which has been one of K mart's major suppliers of portable terminals and which also offers an in-store, spread spectrum system, competitive to Symbol/MSI.

We saw little of note in the areas of mag-stripe or voice recognition that drew our attention. And, although the two-dimensional, mega-density symbologies were the subject of special seminars, it is much too early to evaluate their potential effectiveness. The high-density Cauzin Softstrip has been around for years, but has had very limited success. Dot codes are claiming better performance than two-dimensional bar codes, but no one has found the touchstone for this important area of development as yet.

SCAN-TECH 90

Finally, at SCAN-TECH 90....

....one had to be impressed with the efficiency and professionalism of the AIM staff (headed by Executive Director Bill Hakanson) and their support groups -- particularly Beswick Communications. They helped to produce order out of the organized chaos of a major trade exposition.

There was little inkling....

....during interviews at SCAN-TECH with Tom Durant and other key managers of _Spectra-Physics_, as to just how aggressively the company was planning to pursue the laser gun market.

It turns out that on September 27 -- one week _prior_ to SCAN-TECH 90 -- Spectra-Physics had filed suit (in Oregon) against Symbol Technologies, in the US District Court, "to declare that Spectra-Physics has the right to make, use and sell products free and clear of claims of infringement of any valid and enforceable patent." The suit also contends that Symbol has competed unfairly in the market and seeks to enjoin them from all such acts in the future. Spectra-Physics also seeks compensatory and punitive damages.

Symbol was unaware of the suit until they were served with legal papers on October 9. Spectra issued a public announcement two days later. The blunt statement had an angry and aggrieved tone, alleging: "Symbol Technologies has intimidated customers and competed unfairly by tying purchase agreements for hand-held laser scanners to the grant of licenses to other Symbol Technologies patents."

John O'Brien, recently appointed President of Spectra-Physics, went on to say: "As holder of a bona-fide license from Symbol Technologies for these devices, which we acquired in 1985, Spectra-Physics has every right to participate fully in this arena. We intend to put an end to Symbol Technologies' unfair practices via the courts."

When _SCAN_ asked Spectra to explain the reasons for such a drastic and dramatic action, Durant replied: "Symbol has pressured the OEMs and VARs, which is Spectra's target market, and coerced them with tie-in purchase agreements which they must sign in order to obtain a Symbol license." Durant preferred not to cite specific cases of this alleged abuse, although he did mention the Symbol-Intermec licensing arrangement (_SCAN_ April 90) as one example.

From Symbol, we heard only a surprised reaction: "We have no idea of what they are referring to," a spokesman said. "They have never even shown us their product to see if we feel there would be any possible violations of our patents or license agreement. We do not have tie-in purchase agreements with our customers and we believe that there is no substance to this charge and that the suit is a total waste of time."

At the moment, we seem to be swimming in a sea of mud. No one -- besides Spectra's management -- seems to be clear as to why Spectra has taken this drastic action. Certainly no one can predict how this will all turn out.