

Competitive Activity Report: STC's Optical Storage Subsystem

By Louise Garnett

The long-anticipated optical storage subsystem was unveiled by Storage Technology in mid-September. The 7600 Optical Disk Subsystem is compatible with IBM 370, 4300, and 30XX or equivalent processors running under MVS/SP operating system.

Quantity shipments to end-users are expected to begin in the second quarter 1984 in the U.S., and in the third quarter 1984 worldwide. STC is expected to compete in the optical market with a handful of companies, including Hitachi which recently unveiled an optical disk drive with 12-inch disks.

There are specific user requirements to which the optical disk subsystem is designed to meet. One such requirement is for an archival back-up system. However, the user should note that although the claimed shelf life of the removable media is 10 years, some experts are casting doubts on the validity of this claim. There are other peripheral issues that clearly show that the "buyer better beware". A couple of issues have come up in the trade press such as:

- The optical standards committee cannot agree on disk diameter, composition, thickness or center-hole size of optical disks.
- Standard issues need clarification for system integrators such as compatibility, interfacing, and software.

We see a lack of stability in STC's recently announced optical product in that:

- STC expects to make software available to run the optical disk with computers using MVS/XA but does not have a schedule for making that software available.
- STC plans to market the drive to OEM customers with evaluation shipments beginning in the second quarter 1984, yet no OEM resellers have been signed.
- Dupont, which manufactures STC's optical disks, has a license to manufacture the media as a second source, but has not exercised its option.

Optical disk's use is new and as yet not a proven technology, there are still

many problems to work out. "Users will probably move slowly and cautiously because the new and untested optical disk technology differs radically from the established and field proven magnetic-disk technology". When it comes to reliability and serviceability it's hard to discern the true functioning capacity of the optical disk subsystem.

Another Disc Storage Subsystem

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sembly (HDA) with a horizontal-axis spindle. It provides 819.7 megabytes (MB) of data storage, accessed by two independently addressable actuators. Each actuator can access half, or 409.9 MB, of the data storage space.

The horizontal axis of the HDA allows a single motor to be used efficiently to drive both the spindle and the air-flow system, generating less heat and consuming less power. With fewer mechanical components, the horizontal single-spindle design is inherently more reliable. The use of large-scale, integrated (LSI) circuitry also reduces power consumption and enhances reliability of the subsystem.

The Memorex 3697 primary control unit contains all the interface, power sequencing and control circuits necessary to attach the subsystem to a Memorex 3888 storage control unit or a 3880. The 3697 also contains an HDA which provides data storage space equal to that of the 3695. The 3698 alternate control unit is a mirror image of the 3697, providing an alternate path to stored data. The units offer a data transfer rate of 1.86 MB per second, and an average access time of 19 milliseconds.

A key benefit to the Memorex 3695 subsystem user is the ability to configure a 3697 and 3698 in a short string with an optional dual path feature to permit maximum access to stored data. The Memorex 3695 disc storage modules are also capable of being attached to and running alongside 3375 disc subsystem strings.

List prices for the 3695 Disc Storage Module are \$28,770 purchase, \$808 per month lease; for the 3697

Galaxy Program

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leading edge technology of the 3680. Memorex is now the world's only full-line supplier of direct access storage devices.

Shipments of the 3695 to International customers will begin in the 4Q 1983 and to U.S. customers in January, 1984.

Primary Controller and Disc Storage Module, \$38,040 purchase, \$1,003 lease; for the 3698 Alternate Controller and Disc Storage Module, \$36,290 purchase, \$958 lease. All prices exclude maintenance, and lease prices are for 36-month leases.

Memorex is now taking orders for the 3695 subsystem. Deliveries of the 3695 subsystem will begin immediately.

Memorex, a subsidiary of Burroughs Corporation, manufactures and markets information storage and communications equipment and computer media worldwide.

Promotional Activities

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In other fronts, you've no doubt received the extensive package on the 3695 offering. We're working very closely with International promotion on sharing the support responsibilities for 3695 advertising and promotion, and this very rapid introduction is progressing smoothly.

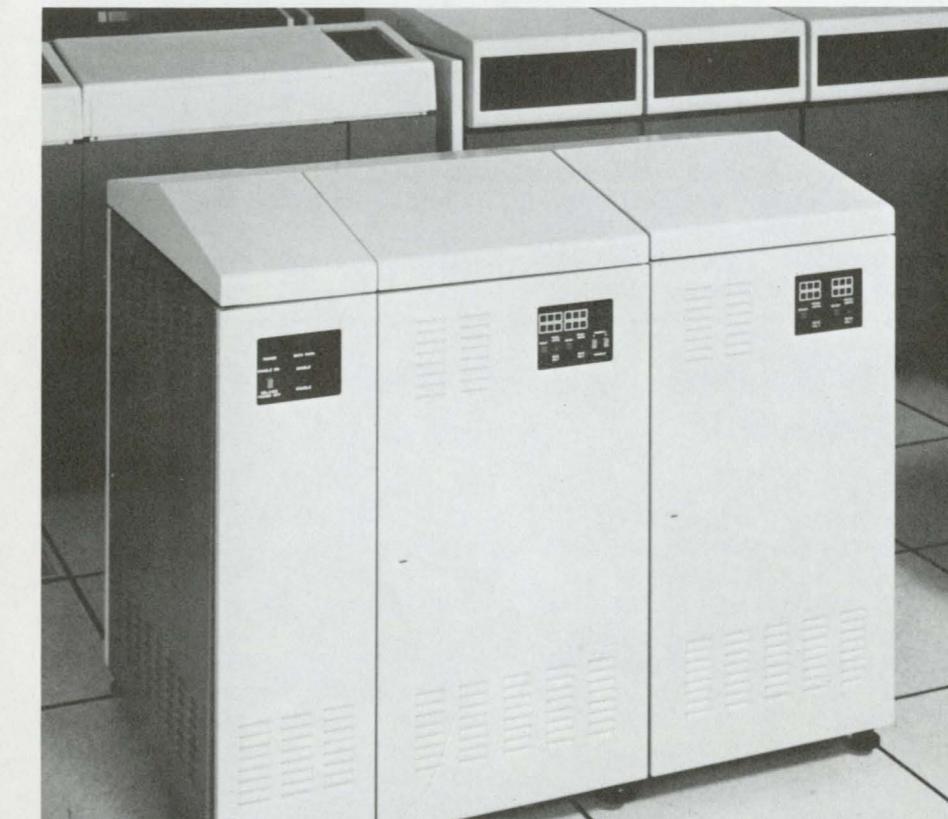
Our relatively new information vehicle, "The Marketing Flash" has been well received as a faster companion piece to the monthly *Memorex Times* that Louise Garnett shepherds through so ably. The "Flashes" are planned to give you a frequent way of getting hot, useful information—and we think they're doing just that.

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MEMOREX TIMES

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Memorex News: Memorex Adds Another Disc Storage Subsystem For Mid-Range Central Processing Units

SANTA CLARA, CA, OCT. 17, 1983—Memorex Corporation today introduced an additional high-performance disc storage subsystem for the rapidly expanding intermediate-range computer marketplace.

With today's introduction of the 3695 subsystem, which is compatible with the 3375, Memorex became the only full-line supplier of direct access storage devices for the 4300 CPU marketplace. Other Memorex storage products for the 4300 marketplace include the 3650, 3690—which are plug-compatible with the 3350 and

3370—and the 3652, a double-density version of the 3650.

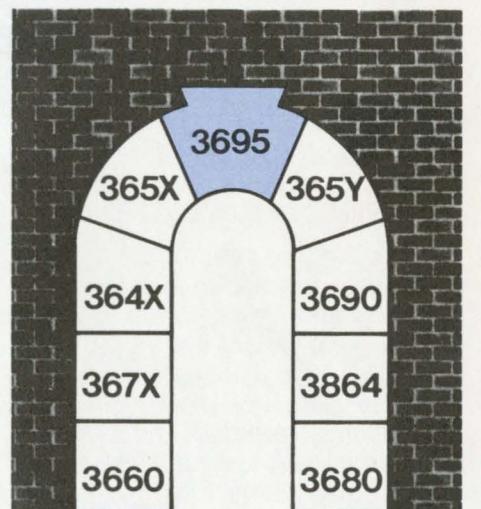
The new Memorex 3695 subsystem includes the 3695 Disc Storage Module, the 3697 Disc Storage and Primary Controller Module, and the 3698 Disc Storage and Alternate Controller Module. The subsystem is based on the highly reliable Memorex 3690 introduced in 1982 and marketed in selected countries outside the United States.

Memorex's 3695 Disc Storage Module contains one head disc as
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Galaxy Program Enhanced With New Product Offering

By Al Tinker

The new Memorex 3695, announced to the world on October 17th, has given the 4300 Galaxy Program the flagship DASD to lead our medium systems marketing campaign for 1984. This superior disc subsystem, which replaces the IBM 3375, has been based on the highly reliable 3690 fixed-block subsystem which has been marketed very successfully by Memorex International for over a year. The 3695 will attach to CPU's via the Memorex 3888 storage control unit, or equivalent IBM units.



Introduction of the 3695 has in effect put the keystone in place in our DASD family. Now Memorex can go to any customer and prospect to offer whatever storage device best fits his needs. We are able to demonstrate the cost benefit of 365Y's, the top performance of the new 3695 and the
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Newsbriefs

By Louise Garnett

- STC unveils its long-anticipated optical storage subsystem. (See the Competitive Activity Report article in this issue of the "Memorex Times". For further article information see Mini-Micro Systems, October, 1983, "Optical Disk Memory: New Techniques, Old Problems" and Electronic News, September 26, 1983, "Storage Technology Debuts Optical Storage Subsystem".)
- IBM unveiled its 3084 Model Q96 in mid-October. The 3084 Model Q96 provides an add-on to the 3081 for a total of 96 megabytes, half in the 3081 and half in the "Q" upgrade. This megabyte upgrade reemphasizes the point that the large shops need more memory. The Memorex 3864 offers 144 megabytes of additional paging/

swapping memory for approximately 7% of the CPU upgrade cost, not to mention the ability to move the 3864 to whatever location it is needed. (See Electronic News, October 24, 1983 for additional IBM announcement details.)

- CDC, Amdahl, IBM, and Burroughs all report third quarter profit, whereas STC predicts a \$6 million dollar loss in the third quarter. STC also reported that they expect a loss for the entire year and do not expect a return to profitability until the first quarter of 1984. STC cites many "excuses" for the loss, such as a decline in sales, and new product investments. Product timing problems have contributed to this profit decline with the delay of their 3880 and IBM's 3380 volume position. Optical disks may not meet

market acceptance for some time (see optical analysis this issue). The mainframe development investment by STC must denote an assumed market for the product. It will be interesting to watch the development since Memorex has been down that same mainframe path, which resulted in some of the financial woes the company experienced back in 1973. STC needs new products to market in order to pull itself out of its current slump, whether these are the products they have chosen, only time will tell.

- IBM has begun supporting the 3380 DASD subsystem under DOS/VSE operating system. 3680 support will be extended to this operating system also.

Memorex News: Memorex and DMA Systems Sign License Agreement

SANTA CLARA, CA, OCT. 10, 1983—Memorex and DMA Systems corporations today signed a license agreement under which Memorex acquired manufacturing rights for DMA's Micro-Magnum™ 5 1/4-inch fixed/removable Winchester cartridge disc drive family and a half-height 5 1/4-inch Winchester cartridge disc drive.

Memorex Corporation will manufacture and market the half-height drive as the Memorex 450 and DMA Systems Corporation will manufacture and market it as the DMA 360.

Today's action resulted from Memorex's decision to exercise options contained in an agreement signed in January of this year, according to Dr. James C. Castle, Memorex executive vice president. "At that time, Memorex and DMA Systems agreed to fund jointly the product development that led to the new half-height drive. The design of the half-height product was developed to jointly agreed specifications by the DMA Systems engineering staff headed by Dave Sutton, engineering vice president," Castle said.

The agreement signed today is "very important to the industry in general, as well as to the companies in

volved," according to Richard Troutte, DMA Systems president and chairman. "Removable Winchester drives are gaining market acceptance because of their high performance and reliability characteristics. Memorex's decision to manufacture these drives will help stimulate a healthy business environment."

Frank Buckley, Memorex vice president for OEM equipment, said the new half-height drive "represents an ideal companion to Memorex's 500 Family of 5 1/4-inch fixed Winchester drives."

"Both Memorex and DMA Systems expect excellent market response to the half-height drive, due to its applicability to the rapidly expanding micro and super-micro computer markets."

DMA Systems, developer of the industry's first fixed/removable 5 1/4-inch Winchester disc drive, has headquarters and production facilities in Goleta, California.

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Promotional Activities

By Ed Vopat

Equipment Advertising and Promotion is moving ahead on a number of fronts; publicity, advertising, literature and many new areas in sales support will be hitting the field from now on. The first ad in an initial three-part advertising campaign will begin soon—you'll be getting reprints shortly with the initial placement schedule. New, expanded data sheets on the 3680, 3683, and 3888 are on the press at this writing.

The recently completed booklet, "How to Survive Through Thick and Thin" will be followed by a new companion piece on the performance benchmarks, which is now in final draft form. Both advertising and literature are positioning Memorex and the 3680 as the "High Performance Alternative to the 3380".

Along with other publicity activity in the form of press kits and press releases, Dr. James Castle and Al Conover recently completed an Eastern swing through the editorial offices of key publications in both the trade and business press, accompanied by John Cardis of the Memorex Corporate Communications Group. Semi-annual press tours are very important in developing and expanding access to these resources.

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Worldwide Memorex News

- The "Marketing Flashes" that we produced in September and October are as follows:

Number	Subject	Date Published
11	3680 First Customer Ship: We Did It!	September 14, 1983
12	Indy 500 Program Race Report	September 14, 1983
13	3680 First Customer Installation	September 20, 1983
14	3680 Question and Answer Update	October 5, 1983
15	New 3680 Environment Specifications	October 6, 1983
16	3864 Technical Presentation	October 7, 1983
17	3864 Performance Study	October 7, 1983
18	3652 Subsystem is the Alternative	October 12, 1983
19	3680 Publicity	October 12, 1983
20	3680 MAPS vs. 3380 DPS	October 20, 1983
21	3680 Question and Answer Update 2	October 27, 1983
22	STC to Post \$6 Million Loss in 3rd Quarter	October 27, 1983

If you are in need of a particular issue, please call Kathe Sears at (408) 987-2301, or Chris Ing in Hounslow.

- The 1983 Quota Club Magic Kit was distributed to all U.S. Sales reps. This kit will help you add points to the install side of your quota points. If you did not receive a copy, and need a little extra magic to get you to Quota Club call Ron Wirtz at (408) 987-9741.
- The 3695 four page, color data sheet is available. Send your orders using EPG-218 to:
California Mailing Services, Inc.
2247 Ringwood Drive
San Jose, CA 95131
Attn: Carol Cramer
International orders should be sent to Chris Ing in Hounslow.
- The 3652 proposal guide was sent out to the field in mid-October. This guide has valuable information to help you sell and install 5Y's. If you are in need of a copy, or have any questions or comments call Bob Booth at (408) 987-1190, or Bill Edmonds in Hounslow.
- The 3680 advertising campaign is underway. Reprints of the ad are available through California Mailing Services, Inc. or Chris Ing in Hounslow. Use ADV-005 when ordering (see the article on the 3680 advertising campaign featured in this issue).
- New four page, color data sheets have been produced on the 3680, 3683, and 3888. These data sheets are available through California Mailing Services, Inc. or Chris Ing in Hounslow. Use EPG-186-1 for the 3680, EPG-217-0 for the 3683 and EPG-187-1 for the 3888 data sheets when ordering.
- The new 3680 marketing guide has been distributed to the field. If you are in need of a copy, or have any questions or comments call Bob Booth at (408) 987-1190, or Chris Ing in Hounslow.

Production Level 3680's Have Been Shipped

By Steve Martin

We are happy to report that the 3680 program is now in full swing! The manufacturing ramp up has begun and we have already shipped production level 3680 strings to a steel company in Japan, to an auto company in Germany, and to numerous customers in the United States (including an agency of the Federal government).

The 3680 plant is feverishly implementing new techniques and procedures to ensure the quality and reliability of these new strings. The plant has installed a statistical process control system to help detect and correct quality problems. The factory will be utilizing robotics for the precise assembly of 3680 HDA's. In addition to the implementation of these new techniques we have incorporated a proven one as well—the 100% burn-in of all components.

We have just completed a series of benchmarks, where we compared the subsystem performance of the 3680 against that of the 3380. The 3680 proved to be the winner, by a significant margin, in all test runs. Details of these performance tests were sent to each of you via a Marketing Flash report.

The 3680 has received extremely favorable publicity including an outstanding Gartner Report article. The Gartner Report article pointed out that the 3680 was the first, 3380-class PCM drive delivered, ahead of STC and CDC! It also went on to point out that the 3680 will significantly outperform the 3380.

New sales tools including a new 3680 Marketing Guide, an updated set of data sheets, a sample proposal, an updated slide presentation, a flip chart presentation, and a performance guide booklet will be sent to you within the month of November. A DASD performance simulation model is being sent to the worldwide Systems Engineering organization. This model will help you to sell the performance advantages of the 3680. An aggressive 3680 advertising campaign will begin in November.

In summary, the 3680 program is on target and on schedule.