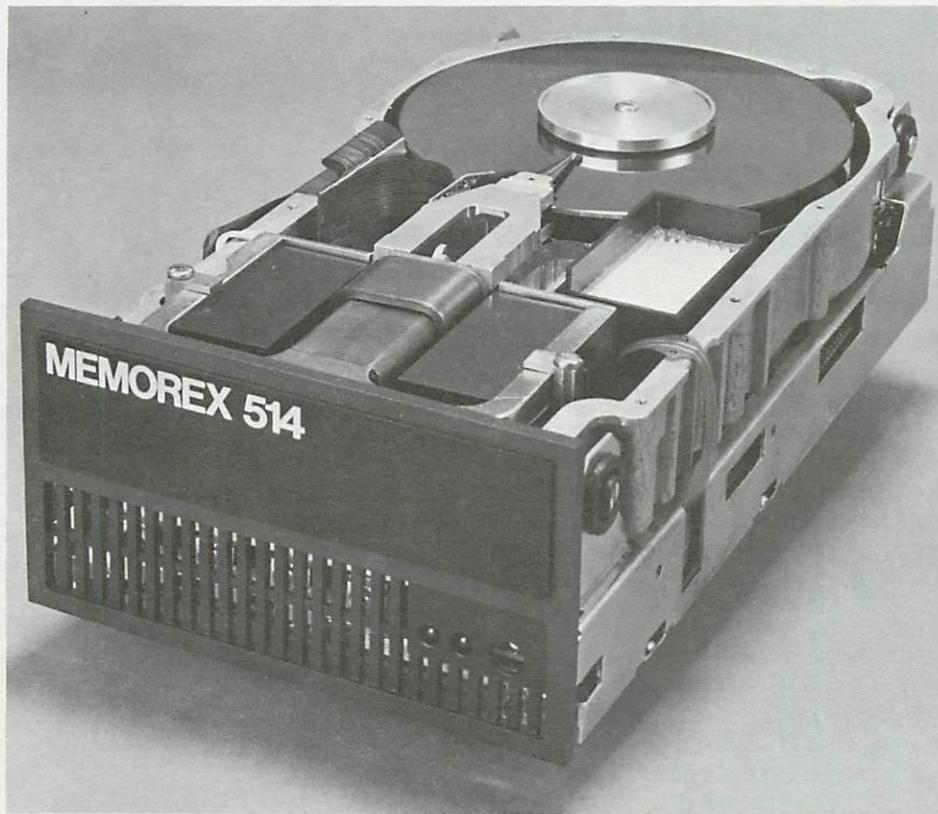


MEMOREX TIMES

Worldwide Storage Equipment Marketing

Volume 2 Issue 4 June 1983



New OEM "Quail" Product Family Introduced

By Ron Lesti

Memorex has announced its entry into the 5 1/4-high performance arena with its 500 product line. The first three members of the product family, the 510 series, offer 30, 50 and 70 megabytes of storage with an average access time of 25 ms and a track-to-track time of 3 ms.

The 500 product family, code named Quail, has been developed by Memorex's Small Disc Drive Engineering (SDDE) group. The Quail product family features thin-metallic-film media, multi-microcomputer adaptive control subsystems with extensive self diagnostics, and a state-of-the-art

read/write head positioning linear actuator and associated servo control subsystems.

Quail is representative of Memorex's technology excellence and leadership. Memorex's advanced component and subsystems knowledge developed in the RTC and RMCD organizations has been synergistically coupled with the product development know-how of SDDE to develop the Quail product family. This synergy has resulted in technologically sound, reliable, and producible leading edge products—quality products. The advanced technology used in the Quail product line includes the following:

Tape Drive Update

By Al Tinker

It looks like IBM's announcement of their 3430 Tape Subsystem will be a big help to Memorex in marketing our own 3260 Tape Drives. The IBM 3430 is slow (50 ips) and expensive. Even though it is 1600/6250 and follows the master/slave type of packaging, it can only grow to a 1 x 4. From all the data in the published specifications, it appears that the 3430 will be sold only to System 38 and 4331-1 users. Our 3260 is 2 1/2 times faster and much less costly, plus it can expand to a 2 x 8 with future 2 x 16 planned for late this summer.

As far as a new cartridge backup tape subsystem for the 3380 discs, there has been no data leaking from Tucson on this subject. However, we have heard that beta sites for the anticipated "Ocillo," or "Del Oro," or whatever IBM decides to call it, have been told to be ready for a system in October.

3228 orders continue to pour in, so keep up the good work.

- Media-state-of-the-art plated thin metal film for improved magnetic recording and signal-to-noise characteristics. Plated media also has superior physical properties (including hardness, wear, smoothness, and shock resistance). Quail's plated media will easily support more than twice the recording density of the entry 510 series.

Quail's media coupled with mini-winchester Read/Write head technology and advanced Read/Write channel electronics provide very high operating margins—margins for manufacturing tolerances and margins for service life.

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Newsbriefs

By Louise Garnett

- IBM has recently purchased a 15% interest in Rolm for \$228 million. The move benefits both companies from a technological perspective. It is cited that "IBM has been unable to come up with a satisfactory digital communications switching design for future voice and data applications, although such R & D work is said to have been conducted by the company for several years in the U.S. and in France." Rolm also benefits with its business "being subjected to increasing competition and its resources possibly becoming strained in a drive to keep abreast of new technical requirements." IBM once again flexes its muscles soon after it's 15% purchased interest in Intel. Many analysts note that IBM's aggressive nature is a result of the antitrust suit being dropped.

(*Electronic News*, Monday, June 13).

- IBIS admits that they have fallen three months behind. Jack Jones, chairman of IBIS said their first plug-compatible equivalent of IBM's 3380 will not be shipped to a beta test site until July or August.

(*Information Systems News*, May 30, 1983)



Memorex News Press Release

On May 10, 1983—Memorex announced the 2074; a large cluster controller that supports IBM's SNA/SDLC communications protocol.

The first version of the Memorex 2074 supports the remote input/output operations of up to 32 devices with IBM Category A interfaces. It is functionally equivalent to models of the IBM 3274 remote cluster controller.

The addition of the 2074 expands Memorex's capability to offer its customers a one-vendor solution within SNA/SDLC environments. Other Memorex SNA/SDLC-compatible products are the 2078 Display Station, the 2079 Color Display Station, and the 2087 Matrix Printer. Those products, and the Memorex 2076 Remote Cluster Controller, also are compatible with binary synchronous protocol.

First customer shipments of the new 2074 are scheduled for September 1983. Purchase price begins at \$13,595 for single quantities, with volume discounts, lease and maintenance terms also available.

The 2074 operates in a point-to-point or multipoint environment at transmission speeds up to 56K bps. Like other Memorex communications devices, the 2074 will communicate with IBM System 370, 303X, 308X and 4300 series processors. It is fully compatible with data links controlled by IBM 3704/3705 and 3725 communications controllers, and with the Integrated Communications Adapter on the 4331.

The 2074 employs a new modular design concept developed by Memorex, called Memorex Common Architecture (MECA). Each functional component is separated into independent hardware and firmware modules. These modules communicate and interact with each other via a high-speed, parallel bus. The 2074 uses multiple 8086 microprocessors, providing it with high internal processing speeds.

"The MECA design will enhance Memorex's ability to protect our customers' in-place investments. Should the market requirements change, the 2074 can be adapted and enhanced by adding or changing modules, versus a complete redesign," Dennis Flanagan, vice president of Marketing for the Memorex Communications Group, said.

The 2074 is designed to be installed and customized for operations by the customer. For customization, users need only complete a Memorex-provided configuration worksheet, then key in that information via a display station attached to the 2074. Throughout the procedure, users are prompted by a series of menus displayed in English, along with the appropriate sequence codes. This unique configuration is written onto a diskette, which also controls all operations, diagnostics and the capability of the 2074 to display systems status information.

MEMOREX TIMES

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U.S. HIGHLIGHTS

U.S. Equipment's Sales Support Team

Far, far to the west in the cellar of Building 12 dwells an organization called U.S. Equipment Sales & Service, Sales Support. (U.S.E.S. & S.S.S. for short, for sure, for sure). A transplanted easterner named Woody Hancock has responsibility for this fine group of field supporters. Marcie Hartwick provides much of the secretarial support.

Organizationally, Sales Support consists of:

Financial Marketing—Stu Price, Marylou Cardosa

Responsibilities include pricing administration, deviation approval, state and local bid support, federal marketing programs, transaction analysis (a west coast term) and headquarters support.

Product Sales Training—John Gercon, Kathy Wilson, Bob Kozich

Responsible for all Product Sales Training (four classes), Advanced Sales Training (three classes), Sales Management Training (three classes), and all special classes such as the special Communication class in July. Also Bob Kozich provides the well-received clipping service to the field and to Headquarters.

Sales Administration—Ken Cook, Doreen Appleman, Leslie Hanlon, Pat Hesselgrave (Pat has been with Memorex 15 years)

The infamous Redline System (Forecasting) is coordinated by Ken's group. They also prepare the Orange Book (monthly sales statistics), and the Forecasting Waterfall chart which the Area Vice Presidents are well aware of. IDC listings (sales prospectors), support to the Major Account Program, and measurement of sales/marketing programs are some other services provided. Ken also is responsible for publishing pricing (but not establishing prices, so no phone calls) and headquarters support.

Product Sales Support (PSS) is divided into three areas with seasoned veterans from the field heading up each function.

PSS—Storage Equipment:

Bob Booth (from Quota Club fame), a talented Systems Engineer, is responsible for field coordination of the 3864 and 3680 programs. Working with Bob is Claire Henderson. Claire (a talented programmer by necessity) brings to Sales Support an in-depth knowledge of the Memorex data bases.

PSS—Sales Programs:

Ron Wirtz (formerly of the Cleveland Wirtzes) and Peggy Droeßler provide a field perspective for all programs prior to release. This is a new approach and explains those calls you might be receiving. Ron will also be coordinating Quota Club (with Bob Booth's counseling; we can't let a good thing slip away). Peggy will continue to provide Compensation Plan assistance. They also will interface with the Communication Group.

PSS—Communications Products:

The Silver Fox is back. Bob Quinn will be providing field support (and input) for the Communications products—established and new. He will also be our representative on the 2100 Management Team (known to many as the B20).

In addition—Bob Booth, Ron Wirtz, Bob Quinn, and John Gercon will participate in the Technology Tours and/or Guest Relations presentations.

The Sales Support staff is really here to support the field. Our numbers are in the Equipment Product Availability and Sales Assistance listing, published monthly by Customer Service.

U.S.E.S. & S.—SALES SUPPORT

Woody Hancock	X2802	Bob Quinn	X3212
Marcie Hartwick	X1892	Bob Booth	X1190
Stu Price	X1044	Claire Henderson	X0206
Marylou Cardosa	X1314	Ron Wirtz	X9741
Ken Cook	X0501	Peggy Droeßler	X0674
Pat Hesselgrave	X2799	John Gercon	X2534
Doreen Appleman	X0500	Kathy Wilson	X2429
Leslie Hanlon	X0477	Bob Kozich	X2392

Worldwide Memorex News

- An analysis was done by Ron Delora on the STC 4800 accelerator and the STC 4500 buffered Tape Controller. This analysis was distributed to all U.S. System Engineers. If you have any questions concerning knock-off advantages, check with the System Engineer in your area.
- Marketing Distribution Center (MDC) has put together a catalog of manuals, brochures, and data sheets that are available from California Mailing Services. To get a copy, send in your order to California Mailing (address available in May's "Memorex Times"). Use stock number 235000.
- The new 3864 brochure is available. Send your order to California Mailing to receive copies. Use stock number EPG-191.
- After initial good publicity for the STC Sybercache, we have heard that the program has suffered a significant setback. After three months of unreliable operation, one of the early users has asked STC to take back the two systems they had been using. The user's threshold of pain was finally exceeded when the two units apparently combined to bring down the user's whole five CPU systems.

Specialists flown out from Boulder were unable to understand why the systems were failing, and the user concluded that the problems more than offset any benefits they were getting.

• The Galaxy direct mail program has been quite successful in opening new doors for sales reps throughout the United States. As of mid June, 45 reps have participated in the program, sending out 582 direct mail packages. Field response surveys have been slow to come in. Our preliminary response shows that approximately 50% of the packages sent out have resulted in "face-to-face" calls. **If you have participated in the program, please send in your Galaxy Mail Campaign, Field Response form.** We use this information to measure the program's success. This measured success will enable us to do other, similar programs. If you do not have the field response form, call me, Louise Garnett at 408/987-9877 and I will take the information over the phone.

- The 3680 Beta Test Update was distributed throughout the world. Additional copies are available for U.S. locations through California Mailing Services (use stock number BRD-001), and for International locations from Chris Ing in Hounslow.
- STC has recently lost some key individuals. There appears to be a great deal of unrest within the STC engineering community.
Dave Dodd—Sybercache's Chief Architect and Development Manager.
Lou Fraunfelder—Vice President of Disc Development; had been Vice President of Tape Engineering for several years.
Bob Ganter—8680 Development Manager, had been responsible for STC's 3650 double density technology.
Bob Smith—Thin-Film Head Development Manager.
- A new video training film of the 3260 tape subsystem and how it compares with the STC 4500 system will be released to the field in July.

"Quail" Product Family

continued from page 1

Quail's media is being sourced from Memorex's RMCD and from Ampex. The RMCD media has been developed at Westlake.

- Control Subsystems—Quail uses five microcomputers. Each microcomputer is dedicated to a specific node or control function such as I/O, servo, spindle motor, etc. Each microcomputer has a comprehensive set of self and node diagnostics. These diagnostics are capable of component fault identification and critical subsystem performance deterioration detection before a fault occurs. This latter feature is termed "predictive maintenance."

Quail's diagnostics are of two types—off-line and in-line. The off-line diagnostic can be run when the drive is not on-line to a host system. The in-line diag-

nostic operates when the drive is on-line to a host. Quail's full range of diagnostic capabilities is accessible via a terminal which plugs to an RS232C type serial maintenance I/O port.

Quail's diagnostics have been designed to support the manufacturing process as well as the user environment. Quail's self diagnostics facilitate easy system's integration, eliminating the requirement for host level device diagnostics, plus offer the capability for user fault identification and a standard means of out-of-box functional testing.

- Actuator and Servo Control Subsystems—read/write head positioning and track following capabilities are provided by a high performance linear voice coil motor and a structurally rigid rectangular-shaped actuator/

carriage assembly under the control of an access servo and a track following servo.

Quail uses a time-proven quadrature servo pattern recorded on a dedicated disc surface. The servo systems derive track crossing, actuator velocity, and position information from these pre-recorded patterns.

Quail's servo subsystems feature semicustom VLSI and hybrid IC technology for improved reliability, low power, and small physical size. This IC technology is coupled with a microcomputer and D to A and A to D converters to provide a very high performance subsystem. This subsystem includes adaptive control loops, which continually monitor critical servo parameters, and automatically makes dynamic adjust-

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IBM Used Equipment Market Stabilizes

By Francis Ma

According to the Computer and Communications Buyer's (CCB) May publication (courtesy of T. Talbot), the used IBM disc and tape drive market appears to be stabilizing during the last three months. In fact, current disc and tape drive prices are on a steady, slight upward trend which may last through the summer. The CCB wholesale prices available in 30 days for the last three months are listed below for your comparison. (Note: spot retail price is always higher than wholesale price.)

However, this optimistic scenario on 3350 is changing. IBM has lowered the 3350 purchase pricing by 23% and the wholesale prices will also be going down proportionally in the next few months.

This high demand for disc and tape drives may still continue because of the emerging economic recovery and current low interest rates. The initial demand from most data processing shops will be for adding the same type of storage devices in the installed site.

The 3380 may be added to the used market in the next couple of months at about 82-84% of list price. The equipment probably comes from the March lease purchase conversion (deadline to be qualified for IBM's VPA price).

IBM has also improved the account receivable collection for used equipment and shortened the first 30 days grace period of operation time. Brokers may have to increase their price slightly to cover that cost.

In spite of the fact that IBM has lowered the 3350 prices, the market for the Memorex 5X, 5Y, and 2X products is still encouraging, due to the demand from expanding storage capacity from older systems and newly added 4341 EPUS. The essence of capturing the market is availability, and most of Memorex disc products are available in 30 days, and some even immediately. If you have a very different picture of the current situation, your updates are welcome.

Product	WHOLESALE PRICE			SPOT PRICE	
	March	April	May	May (User Buying Price)	Price (\$K) % of List
3420-6 (\$K)	10.5-11.5	10.5-11.5	12	N/A	
3420-8 (\$K)	16-16.5	16-16.5	16-16.5	N/A	
3803-2 (\$K)	14	14	12	N/A	
3350 A2 (%)	44-45	45	45-50	22	50%
3350 B2 (%)	44-45	45	45-50	19	
3350 C2 (%)	40	40	40	N/A	50%
3830-2 (\$K)	6	6-7	6-7	7.3	53%
3370-B1 (%)	70	70-72	72-75	20.5	90%
3375-B2	83	85	85-90	25.5	89%
3380	100-103	100-103	100-103	65	91%
3880 (no upgrade) (%)	67	67	67	52.5	71%

3864 Features Unique Enhancements

By Victor Gamaly

There are many features and associated benefits of the Memorex 3864 which make it a superior product to what our competition can offer. One of these enhancements is the ability of the 3864 to run a special adaptation of fixed block architecture under what is called VM Native Mode. The Native Mode feature realizes the advantages offered by the basic architecture of the 3864 system and adds to this by providing:

- Optimum Unit Performance
- Optimum Storage Utilization
- Ease of use

The Native Mode personality of the Memorex 3864 is designed to achieve increased systems performance. The 3864 is directed by specialized channel commands; minor software modifications must be made. The combination of a specialized device in concert with specialized software will provide the optimum in performance for current generation computer systems. Current techniques for data transfer of pages or blocks require a substantial number of host CPU instructions to determine the parameters for current DASD equipment. By modifying the host software to use a block addressable device, the time formerly spent by the CPU to perform these instructions will be available for application program use.

There are significant storage utilization benefits when using the 3864. For example, a 2305 used as a paging

device under VM can handle only 9.2 megabytes of storage per 11.2 megabytes of usable space. However, Memorex's 3864 12-megabyte increment delivers a full 12 megabytes of usable storage. This is an increase of 30 percent. These storage utilization benefits mean that the 3864, in three logical spindles, contains as much data as two 2835-2 and four 2305-2 spindles. A 3864 containing 72 megabytes can be the equivalent of four 2835-2 controllers and eight 2305-2 spindles. Not only is this flexibility important, the space savings and environmental savings with this sort of environment are considerable. It is important to note that our competition cannot offer proven Native Mode support and to a great degree must still revert to a 2305 look-alike. In doing so, products such as the STC 4305 are at a distinct disadvantage in usable storage and environmental.

The Native Mode capability of the 3864 provides a real advantage to VM users; however, to other users the multiple personality capability of the 3864 may offer a perceived advantage. The 3864 is a programmable device and was designed with an onboard computer. Based on the unique approach, the 3864 architecture provides considerably more flexibility and should be readily adaptable to future IBM actions. This gives the user a device which provides the capabilities necessary today and protects his investment for the future.

Competitive Analysis: 3380 Pricing

By Francis Ma

As we are all aware, IBM reduced 3380 prices by 15% exactly one year after the first shipment date. In addition, a volume discount of up to 12% for 50 or more units ordered and a reduction of purchase lease option credit to 20% (from 60%) was announced. Installed lease can also be included in the volume purchase plan, but it had to be executed before March 1, 1983.

In the market it is also known that additional discounts were offered to IBM's largest customers: unofficially, 21% discount for 400 or more units and 15% discount for a fewer unit order. However, it is not known if these discounts are requests for special bids or for the purpose of maintaining account control for IBM.

It is also believed that IBM is offering 3380 type products to the OEM market at low prices.

Recently IBM announced that after January 1, 1984, it will no longer pass ITC (Investment Tax Credit) to rental or lease customers.

Based on the facts above, one would speculate that IBM has built up a huge manufacturing capacity for 3380 and would like to have orders in place before production, and also plan to sell them at high prices so they can achieve a 16% revenue growth each year. IBM Credit Corp becomes the banker to finance long-term firm leases (4 and 5 years and no outs, typically) and takes risks, while IBM records purchases for high revenue and takes ITC for all transactions to improve earnings.

The large discounts that were publicized so much were believed to be for IBM's largest customers only. And it makes business sense to offer lower prices for very large orders, which, in turn, provide large volume production in factory and revenue stream; IBM finally conforms to the norms.

As IBM emphasizes its own company revenue and profit growth by doing practically only purchase business, leaving the Credit Corp for long term leases, in the real world are nearly 50% of the companies choosing leases or rental. According to *Computer Acquisition*, in large companies the "buying" patterns are:

30%	— Lease (culminating in purchase)
20%	— Rental
20%	— Sales/lease back
20%	— Cash purchase/no financing
8.3%	— Buying with financing
1.7%	— Cash with equity financing
100%	

This leaves the third-party financing companies quite optimistic. Their terms and conditions are more competitive and flexible. (IBM Credit Corp requires a minimum of \$100,000 initial transaction amount, 25% down payment on purchases and IBM does not offer upgrade guarantee.) More small-to-medium users will now do business with a third party. Third-party leasing activity has increased and claimed that the chances of making profit have increased by a factor of 15%. Now it requires two to three years to cover the cost compared to the five to six years previously.

This may explain the aggressive financing a few brokers are offering to 3380 customers: 30% residual assumption for a three-year lease and up to 10% for a five-year lease. By the way, this kind of transaction is considered risky even by the *Computer Communication Buyer* because 3380 is not likely to have more than five years' life, as 3350 did.

IBM has changed their pricing strategy and has added lease financing because the market and competitive environment have changed. IBM used to be able to command higher prices just because their product was superior in function, reliability, service and performance. Now the PCM's are catching up. All Memorex products are functionally compatible, use the latest semiconductor technology, plus an innovative engineering design, and our 3680 performance is superior. Also, we have always provided tax leverage financing through MFC and competitive purchase and lease terms to our customers. With such financing options and our 3680, we will continue to be competitive in the marketplace.

"Quail" Product

continued from page 4

ments to compensate for component differences and aging through the product's life cycle. The Quail product requires no preventive maintenance or adjustments.

Quail's servo and access mechanisms are designed to support life cycle enhancements, including faster access performance and higher TPI.

In summary, Quail uses classical yet advanced architecture that provides the best access performance and self maintenance features of any known 5 1/4 product. Further, the 500 product family has been designed as a family of products with commonality of architecture and materials that will support a range of evolutionary products with faster access performance and increasing storage capacities.

Quail stands for Quality—the 500 series is a product family for the 80's—it is a leadership and market responsive product line.

Who's Who

The articles submitted by you enable us to publish the "Memorex Times." A special thanks to:

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